MVC-CD200/CD300

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model
Hong Kong Model
Australian Model
Chinese Model
Tourist Model
Korea Model
Japanese Model

Self Diagnosis Supported model

CD Mavica

COMPACT disc Recordable ReWritable

InfoLITHIUM M SERIES

Photo : MVC-CD300

This service manual contains information for japanese model as well.

On the SY-67 board and the DDX-G2100 COMPLETE ASSEMBLY (Including the MD-083 Board)

This service manual provides the information on the premised of the circuit board replacement service and not intended repair inside the SY-67 board in case of trouble. It is also premised that the mechanism deck DDX-G2100 COMPLETE ASSEMBLY (including the MD-083 board) shall be exchanged as an assembly in case of trouble.

Therefore, disassembling procedure and exploded view of the DDX-G2100 COMPLETE ASSEMBLY are not shown. The block diagram, printed wiring board, schematic diagram and electrical parts list of the SY-67 board are also not shown.

Note that the following pages are lacking intentionally.

SY-67 board

Block diagram ..... Page 3-15 to 3-20
Printed wiring board ..... Page 4-19 to 4-22
Schematic diagram ..... Page 4-23 to 4-42
Electrical parts list ..... Page 6-18 to 6-24

DDX-G2100 COMPLETE ASSEMBLY

Disassembly ..... Page 2-15 to 2-16
Exploded view ..... Page 6-8

MD-083 board

Block diagram ..... Page 3-21 to 3-26
Printed wiring board ..... Page 4-43 to 4-46
Schematic diagram ..... Page 4-47 to 4-54
Electrical parts list ..... Page 6-14 to 6-18

The above-described information is shown in service manual Level 3.

SPECIFICATIONS

System

Image device
MVC-CD200: 6.64 mm (1/2.7 type) color CCD
MVC-CD300: 8.93 mm (1/1.8 type) color CCD

Lens
3× zoom lens
MVC-CD200: f = 6.1 – 18.3 mm (1/4 – 3/4 inches) (39 – 117 mm (1 9/16 – 4 5/8 inches) when converted into a 35 mm still camera)
MVC-CD300: f = 7 – 21 mm (9/32 – 27/32 inches) (34 – 102 mm (1 3/8 – 4 1/8 inches) when converted into a 35 mm still camera)
MVC-CD200: F = 2.8 – 2.9
MVC-CD300: F = 2.0 – 2.5

Exposure control
Automatic exposure, Shutter speed priority, Aperture priority, Manual exposure

White balance
Automatic, Indoor, Outdoor, One-push

Data system
Movie: MPEG1
Still: JPEG, GIF (in TEXT mode, Clip Motion), TIFF
Audio with still image: MPEG1 (Monaural)

Recording medium
8 cm CD-R/CD-RW

Recommended flash recording distance (ISO is set to AUTO):
MVC-CD200: 0.3 m to 2.5 m (11 7/8 inches to 8 1/3 feet)
MVC-CD300: 0.3 m to 3 m (11 7/8 inches to 9 feet 10 1/8 inches)

Drive
Read: Maximum ×8
Write: ×4

Readout
Noncontact optical readout (using semiconductor laser)

Laser
Wavelength: 777 to 787 nm
NA: 0.5
Maximum output: 23 mW
Emission duration: 600 ns

Input and Output connector

A/V OUT (MONO) (Monaural)
Minijack Video:
1 Vp-p, 75 Ω, unbalanced, sync negative
Audio: 327 mV (at a 47 kΩ load)
Output impedance: 2.2 kΩ

ACC jack
Mini-minijack (Ø 2.5 mm)

USB jack
mini-B

LCD screen

LCD panel
TFT (Thin Film Transistor active matrix) drive

LCD size
2.5 type

Total number of dots
123 200 (560×220) dots

General

Application
Sony battery pack NP-FM50 (supplied)

Power requirements
7.2 V

Power consumption (During shooting with the LCD backlight turned on)
MVC-CD200: 3.0 W
MVC-CD300: 3.5 W

Operating temperature
0°C to 40°C (32°F to 104°F)

— Continued on next page —

DIGITAL STILL CAMERA

SONY®

Storage temperature
–20°C to +60°C (–4°F to +140°F)

Dimensions (Approx.)
MVC-CD200: 143×92×89 mm (5 3/4×3 5/8×3 5/8 inches) (w/h/d)
MVC-CD300: 143×92×94 mm (5 3/4×3 5/8×3 3/4 inches) (w/h/d)

Mass (Approx.)
MVC-CD200: 610 g (1 lb 6 oz)
MVC-CD300: 650 g (1 lb 7 oz) (including NP-FM50 battery pack, disc and lens cap, etc.)

Built-in microphone
Electret condenser microphone

Built-in speaker
Dynamic speaker

AC-L10A/L10B/L10C AC power adaptor

Power requirements
100 to 240 V AC, 50/60 Hz

Rated output voltage
DC 8.4 V, 1.5 A in operating mode

Operating temperature
0°C to 40°C (32°F to 104°F)

Storage temperature
–20°C to +60°C (–4°F to +140°F)

Dimensions (Approx.)
125×39×62 mm (5×1 9/16×2 1/2 inches) (w/h/d)

Mass (Approx.)
280 g (10 oz)

NP-FM50 battery pack

Battery type
Lithium ion

Maximum output voltage
DC 8.4 V

Mean output voltage
DC 7.2 V

Capacity
8.5 Wh (1180 mAh)

Operating temperature
0°C to 40°C (32°F to 104°F)

Dimensions (Approx.)
38.2×20.5×55.6 mm (1 9/16×13/16×2 1/4 inches) (w/h/d)

Mass (Approx.)
76 g (3 oz)

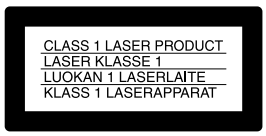
Accessories
AC-L10A/L10B/L10C AC power adaptor (1)
Power cord (mains lead) (1)
Ferrite Core (1)
USB cable (1)
NP-FM50 battery pack (1)
A/V connecting cable (1)
8 cm CD adaptor (1)
Mavica disc (2) (CD-R (1), CD-RW (1))
Shoulder strap (1)
Lens cap (1)
Lens cap strap (1)
CD-ROM (2)
Operating instructions (2)
2-pin conversion adaptor (1) (E, Hong Kong, Tourist model only)

Design and specifications are subject to change without notice.

Table for difference of functions

Model		MVC-CD200	MVC-CD300
Lens	Carl Zeiss lens	×	○
	Optical zoom	3×	
	Digital zoom	6×	
	Filter diameter	37mm	52mm
CCD imager	Size	1/2.7 type	1/1.8 type
	Pixels	2.1mega	3.3mega
Image size	Still	1600×1200	2048×1536
		1600 (3:2)	2048 (3:2)
		1024×768	1600×1200
		640×480	1280×960
			640×480
	Movie	320 (HQ)	
		320×240	
		640×480	

CAUTION
Use of controls or adjustments or performance procedures other than those specified herein may result in hazardous radiation exposure.



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

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Exploded view and parts list of DDX-G2100 COMPLETE ASSEMBLY are not shown.
Page 6-8 is not shown.

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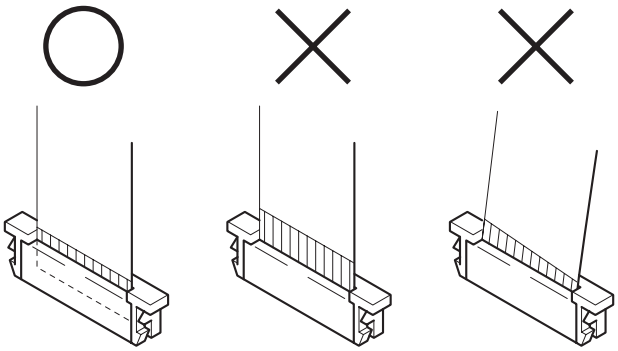
Electrical parts list of the SY-67 and MD-083 boards are not shown.
Pages from 6-14 to 6-24 are not shown.

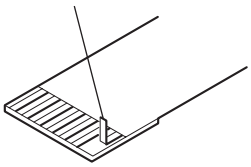
* LED illumination axis frame and color reproduction frame are shown on pages 160 and 161.

• NOTE FOR REPAIR

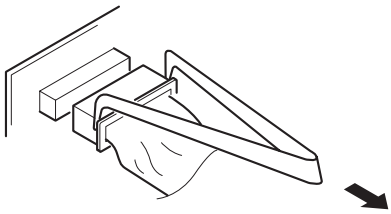
Make sure that the flat cable and flexible board are not cracked of bent at the terminal.
Do not insert the cable insufficiently nor crookedly.



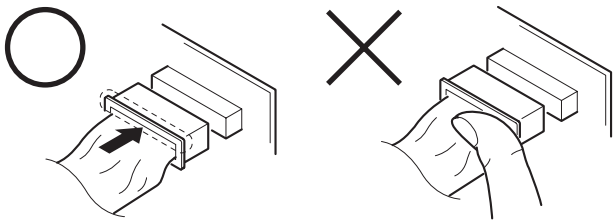
Cut and remove the part of gilt which comes off at the point. (Take care that there are some pieces of gilt left inside)



When remove a connector, don't pull at wire of connector. Be in danger of the snapping of a wire.



When installing a connector, don't press down at wire of connector. Be in danger of the snapping of a wire.

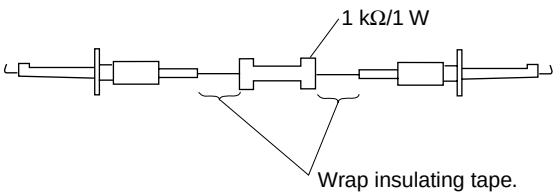


[Discharging of the FLASH unit's charging capacitor]

The charging capacitor of the FLASH unit is charged up to the maximum 300 V potential.
There is a danger of electric shock by this high voltage when the capacitor is handled by hand. The electric shock is caused by the charged voltage which is kept without discharging when the main power of the MVC-CD200/CD300 is simply turned off. Therefore, the remaining voltage must be discharged as described below.

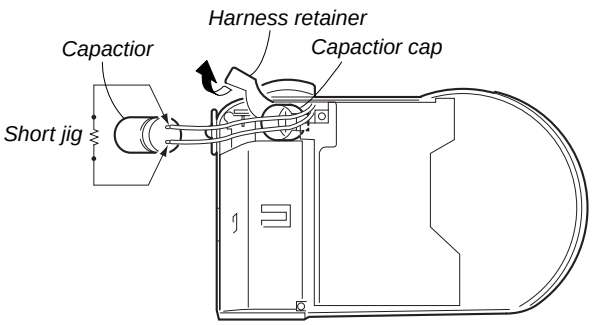
Preparing the Short Jig

To preparing the short jig. a small clip is attached to each end of a resistor of 1 kΩ /1 W (1-215-869-11)
Wrap insulating tape fully around the leads of the resistor to prevent electrical shock.



Discharging the Capacitor

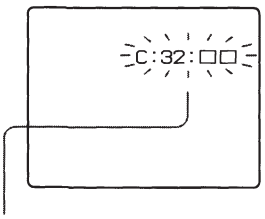
Short circuits between the positive and the negative terminals of charged capacitor with the short jig about 10 seconds.



[Description on Self-diagnosis Display]

Self-diagnosis display

The camera has a self-diagnosis display. This function displays the camera condition with five-digits (a combination of a letter and figures) on the LCD screen. If this occurs check the following code chart. The five-digit display informs you of the camera current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

- C: □□: □□
  The contents which can be handled by customer, are displayed.
- E: □□: □□
  The contents which can be handled by engineer, are displayed.

Display Code	Countermeasure	Cause	Caution Display During Error
C:32:01	Change the disk and turn off the main power then back on.	Defective base unit.	DRIVE ERROR
C:13:01	Replace the CD-R/RW disk.	• The type of CD-R/RW disk that cannot be used by this machine, is inserted. • Data is damaged.	DISK ERROR
E:91:01	Checking of flash unit or replacement of flash unit	Abnormality when flash is being charged.	Flash LED Flash display Flashing at 3.2 Hz
*1 E:61:00	Checking of lens drive circuit	When failed in the focus initialization.	—
*1 E:61:10			

Note: The error code is cleared if the battery is removed.
*1 : The error display is given in two ways.

SECTION 1
GENERAL

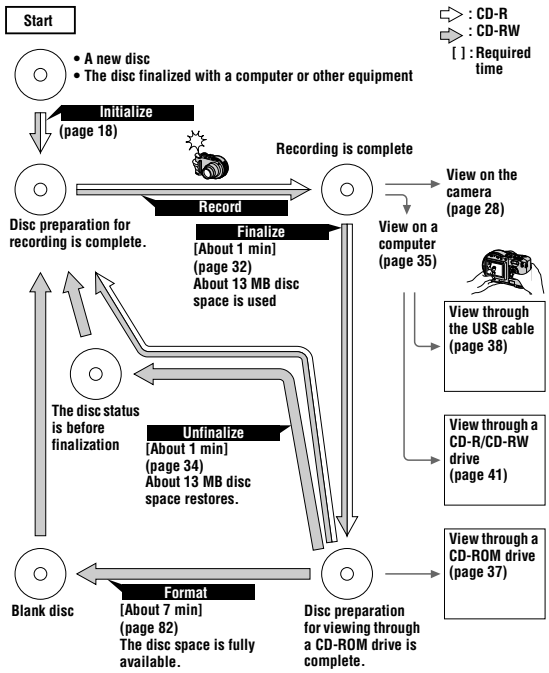
This section is extracted from instruction manual.

Introduction

Captures images with your computer

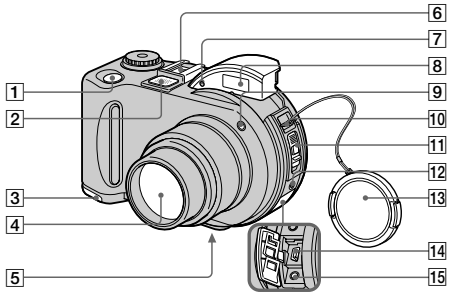
You can easily copy images onto your computer through a CD-ROM drive, CD-R drive, CD-RW drive, or the USB cable and view and modify images on your computer using application software. When using a CD-ROM drive to view images on your computer, the finalization is required (page 32).

Flow chart for disc operations


Start
: CD-R
: CD-RW
[ ] : Required time
• A new disc
• The disc finalized with a computer or other equipment
Initialize
(page 18)
Recording is complete
Record
View on the camera (page 28)
Disc preparation for recording is complete.
Finalize
[About 1 min]
(page 32)
About 13 MB disc space is used
View on a computer (page 35)
View through the USB cable (page 38)
The disc status is before finalization
Unfinalize
[About 1 min]
(page 34)
About 13 MB disc space restores.
View through a CD-R/CD-RW drive (page 41)
View through a CD-ROM drive (page 37)
Blank disc
Format
[About 7 min]
(page 82)
The disc space is fully available.
Disc preparation for viewing through a CD-ROM drive is complete.

Identifying the parts

See the pages in parentheses for details of operation.

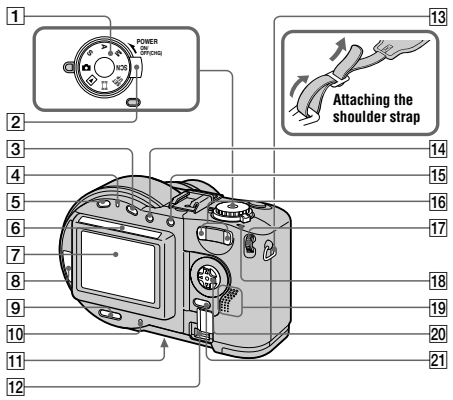


1. **Shutter button (20, 26)**
2. **Built-in microphone**
   Do not touch while recording.
3. **Battery cover (bottom surface) (9)**
4. **Lens**
5. **Tripod receptacle (bottom surface)**
   Use a tripod with a screw length of less than 6.5 mm (7/32 inch). You cannot firmly secure the camera to tripods having longer screws, and may damage the camera.
6. **Accessory shoe**
7. **Photocell window for flash**
   Do not block while recording with the flash.
8. **Flash (24)**
9. **Self-timer lamp/AF illuminator (24, 25)**
10. **Hook for strap and lens cap**
11. **Disc cover OPEN lever (16)**
12. **ACC (Accessory) jack**
    Connects an external flash or other equipment.
13. **Lens cap (supplied)**
14. **USB jack (38)**
15. **A/V OUT (MONO) jack (76)**
    Audio output is monaural.

About the Carl Zeiss lens (MVC-CD300 only)

This camera is equipped with a Carl Zeiss lens which is capable of reproducing fine images. The lens for this camera uses the MTF* measurement system for cameras developed jointly by Carl Zeiss, in Germany, and Sony Corporation, and offers the same quality as other Carl Zeiss lenses.

* MTF is an abbreviation of Modulation Transfer Function/Factor, a numeric value indicating the amount of light from a specific part of the subject gathered at the corresponding position in the image.

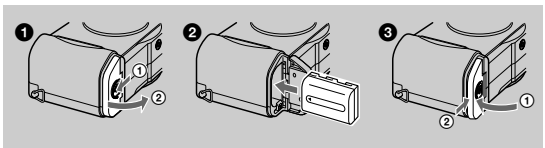


1. **Mode dial (45)**
2. **POWER switch (14)**
3. **(Exposure) button (67)**
4. **/CHG (Charge) lamp (10, 25)**
5. **FOCUS button (66)**
6. **Photocell window for LCD screen**
   The LCD screen becomes brighter when exposed to sunlight.
7. **LCD screen**
8. **Disc window**
9. **DISPLAY/LCD BACK LIGHT ON/OFF button (23)**
10. **ACCESS lamp (20)**
11. **Reset button (99)**
12. **DC IN cover/DC IN jack (10, 13)**
13. **Hook for strap**
14. **[•] (Spot meter) button (71)**
15. **AE LOCK button (55)**
16. **Zoom W/T buttons (22)**
17. **Jog dial (48)**
18. **POWER ON/OFF (CHG) lamp (14)**
19. **Speaker**
20. **Control button (46)**
21. **MENU button (46)**

Preparing the power supply

Installing the battery pack

Your camera operates only with the NP-FM50 (supplied) "InfoLITHIUM" battery pack* (M series). See page 91 for more information about "InfoLITHIUM" battery pack.



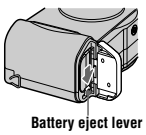
1 Open the battery cover.
Slide the battery cover in the direction of the arrow.

2 Install the battery pack.
Insert the battery pack with the ▲ mark facing toward the battery compartment as illustrated.

3 Close the battery cover.

To remove the battery pack

Open the battery cover. Slide the battery eject lever in the arrow direction, and remove the battery pack.
Be careful not to drop the battery pack when removing it.



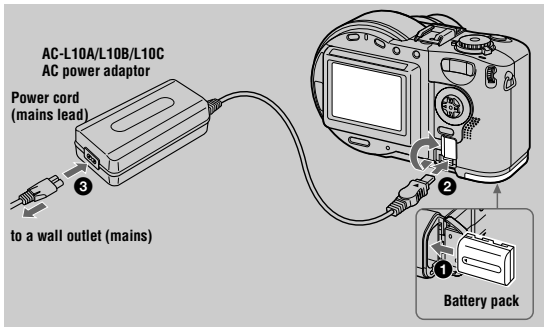
Battery eject lever

**** What is "InfoLITHIUM"?***

"InfoLITHIUM" is a lithium ion battery pack which can exchange information such as battery consumption with compatible video equipment. "InfoLITHIUM" M series battery packs have the mark. "InfoLITHIUM" is a trademark of Sony Corporation.

Charging the battery pack

When the camera is turned on, you cannot charge the battery pack. Be sure to turn off the power of the camera.



❶ Insert the battery pack into your camera.

❷ Open the DC IN cover and connect the AC power adaptor to the DC IN jack of your camera with the ▲ mark facing up.

❸ Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (mains).
The ϟ/CHG lamp (orange) above the LCD screen lights up when charging begins. When the ϟ/CHG lamp goes off, **full charge** is completed.

After charging the battery pack

Disconnect the AC power adaptor from the DC IN jack on your camera.

Battery remaining indicator

The LCD screen on the camera shows the remaining time for which you can still record or play back images.
This indication may not be entirely accurate depending on the conditions of use and the operating environment.
Charging at a room temperature of 10°C to 30°C (50°F to 86°F) is recommended.

Notes

- The battery life and number of images will be decreased when using at low temperature, using the flash, turning the power on/off frequently, or using the zoom.
- The numbers of images shown on tables above are as a guide. The numbers may be smaller depending on conditions.
- If sufficient battery remaining time is indicated but the power runs out soon, fully charge the battery so that the correct battery remaining time appears.
- Do not short the DC plug of the AC power adaptor with a metallic object, as this may cause a malfunction.

NP-FM50 (supplied) battery pack

When you record images in an extremely cold location or using the LCD backlight, the operating time becomes short. When using the camera in an extremely cold location, place the battery pack in your pocket or other places to keep it warm, then insert the battery pack into the camera just before recording. When using a pocket heater, take care not to let the heater directly contact the battery.

Note on the ϟ/CHG lamp during charging

The ϟ/CHG lamp may flash:
- When a malfunction occurs in the battery pack (page 99).

The ϟ/CHG lamp does not light up:
- When the battery pack is not installed properly.

Charging time

Battery pack	Full charge (min.)
NP-FM50 (supplied)	Approx. 150

Approximate time to charge a completely discharged battery pack at a temperature of 25°C (77°F).

Battery life and number of images that can be recorded/played back

Still image recording/playback

	NP-FM50 (supplied)	
	Battery life (min.)	Number of images
Continuous recording*	Approx. 75	Approx. 800
Continuous playback**	Approx. 120	Approx. 1000

Approximate battery life and number of images that can be recorded/played back at a temperature of 25°C (77°F) with a fully charged battery pack, using 640×480 image size, standard image quality, and NORMAL recording mode.

* Recording at about 5-second intervals

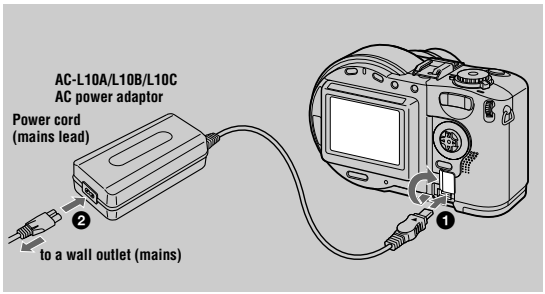
** Playing back single-displayed images continuously at about 7-second intervals

Moving image recording

	NP-FM50 (supplied)
	Battery life (min.)
Continuous recording	Approx. 120

Approximate time that can be recorded 160×112-sized images at a temperature of 25°C (77°F) with a fully charged battery pack.

Using the AC power adaptor



❶ Open the DC IN cover and connect the AC power adaptor to the DC IN jack of your camera with the ▲ mark facing up.

❷ Connect the power cord (mains lead) to the AC power adaptor and then to a wall outlet (mains).

Using a car battery

Use a Sony DC adaptor/charger.

Using your camera abroad

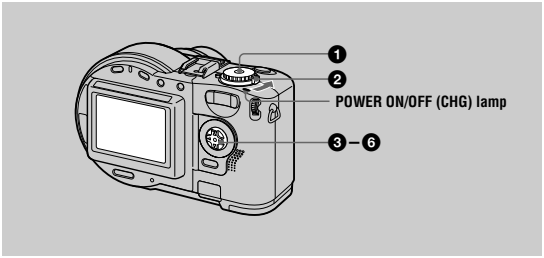
For details, see page 90.

When using the AC power adaptor

Be sure to use it near the wall outlet (mains). If a malfunction occurs, disconnect the plug from the wall outlet (mains).

Setting the date and time

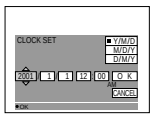
When you first use your camera, set the date and time. If these are not set, the CLOCK SET screen appears whenever you turn on your camera.



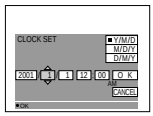
1 Set the mode dial to , S, A, M, , SCN, or .

2 Push the POWER switch in the arrow direction to turn on the power.
The POWER ON/OFF (CHG) lamp (green) lights up.
The CLOCK SET screen appears.
When resetting the date and time once you set, set the mode dial to SET UP (page 84), and then follow the procedure from step 3.

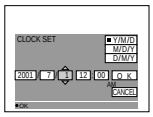
3 Select the desired date display format with ▲/▼ on the control button, then press the center ●.
Select from [Y/M/D] (year/month/day), [M/D/Y] (month/day/year), or [D/M/Y] (day/month/year).



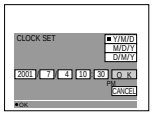
4 Select the year, month, day, hour or minute item you want to set with ◀/▶ on the control button.
The item to be set is indicated with ▲/▼.



5 Set the numeric value with ▲/▼ on the control button, then press the center ● to enter it.
After entering the number, ▲/▼ moves to the next item. If you selected [D/M/Y] in step 3, set the time on a 24-hour cycle.



6 Select [OK] with ▶ on the control button, then press the center ● at the desired moment to begin clock movement.
The date and time are entered.

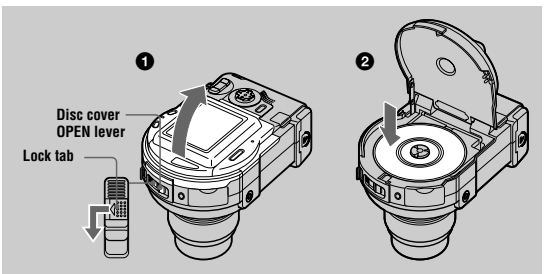


To cancel the date and time setting

Select [CANCEL] with ▲/▼/◀/▶ on the control button, then press the center ●.

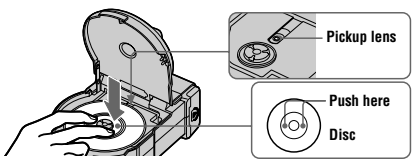
Inserting a disc

You can use only the 8 cm CD-Rs or 8 cm CD-RWs that have these marks.



1 While sliding the lock tab to the left, slide down the disc cover OPEN lever.
Open the disc cover by your hand after the cover is unlocked.

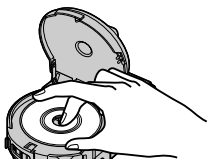
2 Place a disc with the printed side up.
Push down the center of the disc until it clicks. When installing, do not push with too much force and do not touch the pickup lens.



3 Close the disc cover.

Removing the disc

While sliding the lock tab to the left, slide down the disc cover OPEN lever, and open the disc cover after the cover is unlocked. Then, remove the disc as illustrated below.

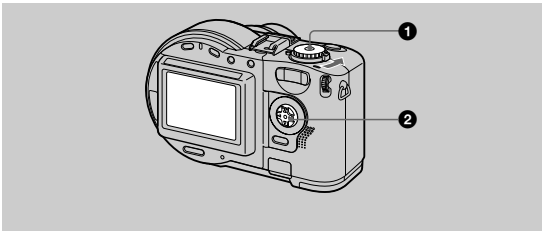


Notes

- Before removing the disc, be sure to check that the disc is not rotating.
- Do not open the disc cover while the ACCESS lamp is lit. If you do, the recorded image may be damaged or the disc may become unusable.
- When writing data on a disc or connecting with a computer using the USB connection, the disc cover OPEN lever is locked.

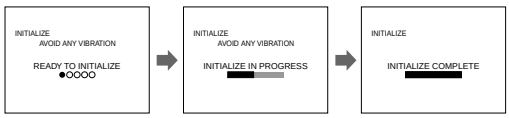
Initializing a disc (INITIALIZE)

When you use a new disc or the disc which was finalized with other equipment than this camera (page 32), you have to initialize the disc. Before initializing the disc, push the POWER switch in the arrow direction to turn on the power and insert the disc.



1 Set the mode dial to 📷, S, A, M, SCN, or 🎞.
"INITIALIZE PLACE ON LEVEL SURFACE" appears on the LCD screen. Be sure to avoid any vibration during the initialization in step 2.

2 Select [OK] with ▲ on the control button, then press the center ●.
Initialization starts.



To cancel the initialization

Select [CANCEL] with ▼ on the control button, then press the center ●.

To initialize after canceling the initialization

Open and close the disc cover. Or set the mode dial to 📷, S, A, M, SCN, or 🎞, press ▲ on the control button, then press the center ●.

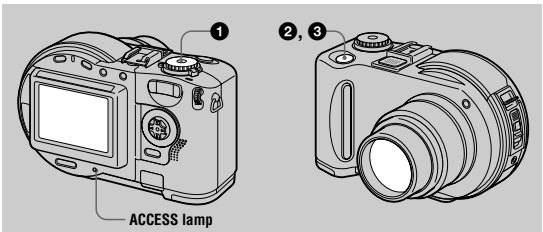
What is initialization?

The initialization is required to record images on a disc.
In case that you have executed the finalization (page 32) using the camera to view images on a CD-ROM drive, the initialization is automatically executed. You can continuously record images. When executing the finalization using a computer or other equipment, execute the initialization to record new images. Images recorded before finalization will remain on the disc.

Tip
You can also execute the initialization using [🔧] (DISC TOOL) in the setup settings (page 84).

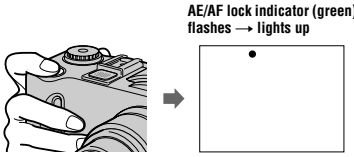
Recording still images

Still images are recorded in JPEG format. Before recording still images, push the POWER switch in the arrow direction to turn on the power and insert a disc.

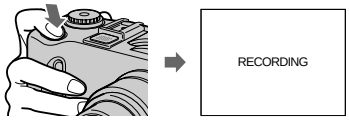


1 Set the mode dial to 📷, S, A, M, or SCN.

2 Press and hold the shutter button halfway down.
The beeps sound. However, **the image has not been recorded yet**. While the AE/AF lock indicator ● is flashing, the camera automatically adjusts the exposure and focus of the captured image. When the camera finishes the automatic adjustments, **the AE/AF lock indicator ● stops flashing, then lights up, and the camera is ready for recording.**
If you release the shutter button, the recording will be canceled.



3 Press the shutter button fully down.
The shutter clicks. "RECORDING" appears on the LCD screen, and the image will be recorded on the disc. When "RECORDING" disappears from the LCD screen, you can start the next recording.



For the number of images you can record on a disc

See page 54.

Auto power-off function

If you do not operate the camera for about three minutes, the camera turns off automatically to prevent wearing down the battery pack. To use the camera again, push the POWER switch in the arrow direction to turn on the camera again.

While the image is being recorded on a disc, the ACCESS lamp lights. When this lamp is lit, do not shake or strike the camera. Also, do not turn the power off, not remove the battery pack/disc, or not open the disc cover. Otherwise, an image data breakdown may occur or the disc may become unusable.

Notes

- When using a CD-R, even if you delete images, the disc remaining space does not increase.
- Only when using a CD-RW, the disc remaining space increases after deleting the last-recorded image if the 🔄 is indicated on the LCD screen before deleting. If you modify an image, or open and close the disc cover, 🔄 will disappear.
- When recording bright subjects, the color of the LCD screen may change after the AE is locked. However, this will not affect the recorded image.
- After you change the disc, "REPAIRING DATA" appears on the LCD screen and it may take about 10 minutes to get ready for recording depending on the disc condition.
- When you press the shutter button fully down at once, the camera starts recording after the automatic adjustment is complete. However, the recording cannot be carried out while the ⚡/CHG lamp (page 8) is flashing. (During this time, the camera is charging the flash.)
- When the AE/AF lock indicator flashes slowly, the subject may be hard to focus on because it is too dark or no contrast, or it may be too close to the camera. Release the shutter button, and focus on it again.

Checking the last recorded image (Quick Review)

You can check the last recorded image by clearing the menu from the screen (page 46) and pressing ◀ (⟲) on the control button.
To return to the normal recording mode: press the shutter button lightly, or press ◀ (⟲) again.
To delete the image: 1. Press MENU. 2. Select [DELETE] with ▶, then press the center ●. 3. Select [OK] with ▲, then press the center ●.

Adjusting the brightness of the LCD screen

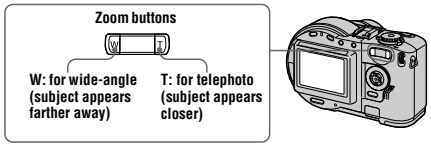
Adjust the brightness with the [LCD BRIGHTNESS] item in the setup settings (page 85). This adjustment does not affect the brightness of the images recorded on the disc.

To turn off the LCD backlight

Press DISPLAY/LCD BACK LIGHT ON/OFF repeatedly to turn off the LCD backlight (page 23). The battery life will be longer.

Using the zoom feature

The lens part moves in/out while zooming. Be careful not to touch the lens.



If you cannot get a sharp focus on a close subject

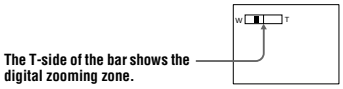
Press the zoom W button repeatedly and move closer to the subject until the focus is sharp (page 66).

Minimum focal distance to the subject

W side: Approx. 50 cm (19 3/4 inches) (MVC-CD200)
Approx. 50 cm (19 3/4 inches) (MVC-CD300)
T side: Approx. 60 cm (23 5/8 inches) (MVC-CD200)
Approx. 50 cm (19 3/4 inches) (MVC-CD300)
To record even closer subjects, see page 66.

Digital zoom function

This camera has a digital zoom function.
Digital zoom enlarges the image by digital processing, and it starts to function when the zoom exceeds 3×.



Using digital zoom

- The maximum zoom magnification is 6×.
- Digital zooming deteriorates the picture quality. When digital zoom is not necessary, set [DIGITAL ZOOM] to [OFF] in the setup settings (page 84).

Notes

- Digital zoom does not work for moving images.
- The zoom function does not work while recording a moving image. Set the zoom position before you start recording (MVC-CD300 only).

The indicators on the LCD screen during recording

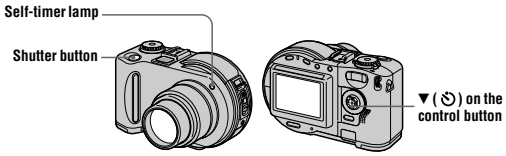
Each time you press DISPLAY/LCD BACK LIGHT ON/OFF, the status of the LCD screen changes as follows:
The LCD backlight is turned on/all the available indicators are turned on
→ The LCD backlight is turned on/warning messages and manual adjustment items which are set using the jog dial are turned on
→ The LCD backlight is turned off/warning messages and manual adjustment items which are set using the jog dial are turned on
See page 105 for a detailed description of the indicators.

Notes

- You cannot turn off the ⏲ (self-timer) indicator and some of the indicators used in advanced operations.
- The indicators on the LCD screen are not recorded.

Using the self-timer

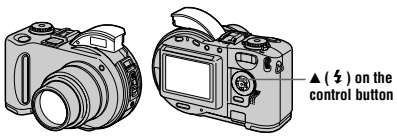
When you use the self-timer function, the subject is recorded about 10 seconds after you press the shutter button.



Clear the menu (page 46), then press ▼ (⏲) on the control button. The ⏲ (self-timer) indicator appears on the LCD screen, and the subject is recorded about 10 seconds after you press the shutter button. After you press the shutter button, the self-timer lamp flashes until the image is recorded.

Recording images with the flash

The initial setting is AUTO (no indication). In this mode, the flash automatically pops up and strobes if the camera senses that the surroundings become dark. To change the flash mode, clear the menu (page 46), then press ▲ (ϟ) on the control button repeatedly so that the flash mode indicator on the LCD screen changes.



Each time you press the button, the indicator changes as follows.
(No indication) → ϟ → ⊗ → (No indication)
ϟ Forced flash : The flash strobes regardless of the surrounding brightness.
⊗ No flash : The flash does not strobe.
Pop down the flash by your hand after recording.

You can change the amount of flash light with [ϟ ±] (FLASH LEVEL) in the menu settings (page 50).

To reduce the red-eye phenomenon

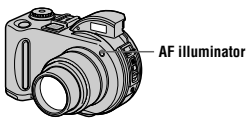
Set [RED EYE REDUCTION] to [ON] in the setup settings (page 84), the flash strobes before recording to reduce the red-eye phenomenon. When [ON] is selected, 👁 appears on the LCD screen.

Notes

- When [ISO] is set to [AUTO] in the menu settings (page 49), the recommended shooting distance is 0.3 to 2.5 m (11 7/8 inches to 8 1/3 feet) (MVC-CD200) or 0.3 to 3.0 m (11 7/8 inches to 9 feet 10 1/8 inches) (MVC-CD300). When it is not set to [AUTO], the flash may be ineffective even if the flash level is changed.
- Attaching a conversion lens (optional) may block the light from the flash and the recorded image may be eclipsed.
- You cannot use the built-in flash and an external strobe (optional) at the same time.
- The RED EYE REDUCTION function may not produce the desired red-eye reduction effects depending on individual differences, the distance to the subject, if the subject does not see the pre-strobe, or other conditions.
- Red-eye reduction effects are also difficult to obtain if you select a slow shutter speed in shutter speed priority mode.
- The flash effect is not obtained easily when you use forced flash in a bright location.
- While charging the flash, the ϟ /CHG lamp flashes. After the charging is complete, the lamp goes out.
- The flash does not function when recording moving images or recording in EXP BRKTG or BURST mode (MVC-CD300 only) (pages 59, 63).

Recording images with the AF illuminator

The AF illuminator is fill light to focus on a subject easily under dark conditions. Set [AF ILLUMINATOR] to [ON] in the setup settings, ᴬᶠ$_{ON}$ appears on the LCD screen and the AF illuminator emits light when the shutter button is pressed halfway under dark situations. It keeps emitting light until the focus is locked.

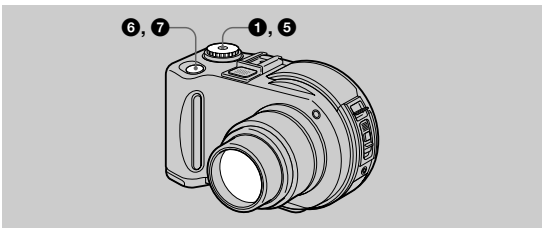


Notes

- If AF illuminator light does not reach the subject sufficiently or the subject has no contrast, focus will not be achieved. Approximate 0.3 to 3.0 m (11 7/8 inches to 9 feet 10 1/8 inches) distance is recommended.
- In TWILIGHT mode of the SCENE SELECTION function (page 58), the AF illuminator will emit only when the flash mode is set to ϟ (Forced flash).
- The AF illuminator will not emit when the LANDSCAPE mode of the SCENE SELECTION function (page 58) is selected or [CONVERSION LENS] is set to [ON] in the setup settings (page 85). ([CONVERSION LENS] is only for MVC-CD300.)
- Focus is achieved as long as AF illuminator light reaches the subject even if its light is slightly out of the middle position of the subject.
- AF illuminator light is safe for persons. However, do not use the AF illuminator with its light emitted directly to person eyes at point-blank range as its light is very strong.

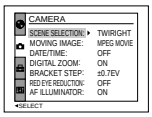
Recording moving images

Moving images with audio are recorded in MPEG format. Before recording moving images, push the POWER switch in the arrow direction to turn on the power and insert a disc.

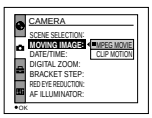


1 Set the mode dial to SET UP.
The setup screen appears.

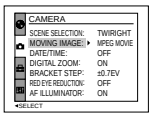
2 Select [ ] (CAMERA) with ▲/▼ on the control button, then press ►.



3 Select [MOVING IMAGE] with ▲/▼ on the control button, then press ►.



4 Select [MPEG MOVIE] with ▲/▼ on the control button, then press the center ●.



5 Set the mode dial to .
The preparation for recording a moving image is complete.

6 Press the shutter button fully down.
"REC" appears on the LCD screen and the image and sound are recorded on the disc.

7 Press the shutter button fully down again to stop recording.
The recording automatically stops in the following time even if you do not press the shutter button again.
When selecting the 320 (HQ) size: Approximate 15 seconds
When selecting the 320×240 size: Approximate 1 minute
When selecting the 160×112 size: Approximate 4 minutes
For details on the image size, see "Setting the image size (IMAGE SIZE)" on page 53.

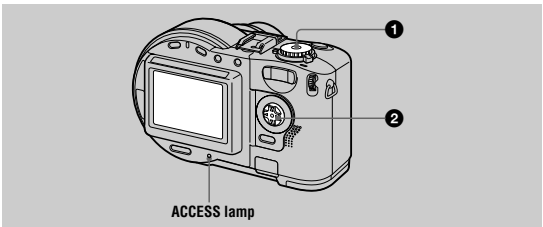
Adjusting the brightness of the LCD screen, zooming or using the self-timer

See pages 22 to 24.

The indicators on the LCD screen during recording

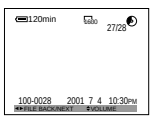
Press DISPLAY/LCD BACK LIGHT ON/OFF to turn on/off the indicators on the LCD screen.
These indicators are not recorded. See page 105 for a detailed description of the indicators.

Playing back still images



1 Set the mode dial to .
The ACCESS lamp lights and the last recorded image (still or moving) appears on the LCD screen.

2 Select the desired still image with ◄/► on the control button.
◄: To display the preceding image.
►: To display the next image.

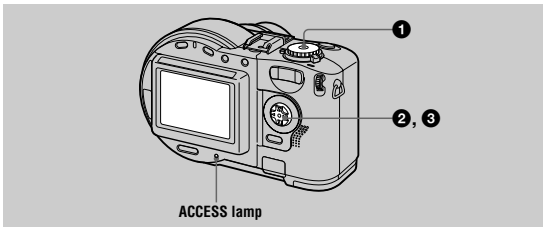


Note
You may not be able to play back images whose image sizes are larger than the maximum image size that can be used with this camera for recording.

The indicators on the LCD screen during still image playback

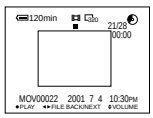
Press DISPLAY/LCD BACK LIGHT ON/OFF to turn on/off the indicators on the LCD screen.
See page 106 for a detailed description of the indicators.

Playing back moving images

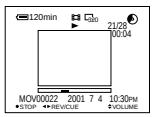


1 Set the mode dial to .
The ACCESS lamp lights and the last recorded image (still or moving) appears on the LCD screen.

2 Select the desired moving image with ◄/► on the control button.
Moving images are displayed one size smaller than still images except when you shot at the 320 (HQ) (page 53) size.
◄: To display the preceding image.
►: To display the next image.



3 Press the center ● on the control button to start the playback.
The moving image and sound are played back.
During playback, ► (playback) appears on the LCD screen.



To stop the playback

Press the center ● on the control button to stop the playback.

To advance or rewind the moving image

Press ◄/► on the control button during playback. To return to the normal playback, press the center ●.

Adjusting the volume

Press ▲/▼ on the control button to adjust the volume.

The indicators on the LCD screen during moving image playback

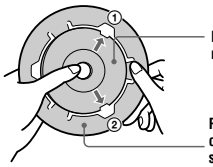
Press DISPLAY/LCD BACK LIGHT ON/OFF to turn on/off the indicators on the LCD screen.
See page 107 for a detailed description of the indicators.

Preparation for viewing images using a computer

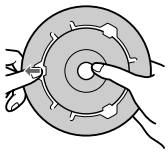
Using the supplied 8 cm CD adaptor

When your disc drive does not conform to 8 cm CD, use the supplied 8 cm CD adaptor.

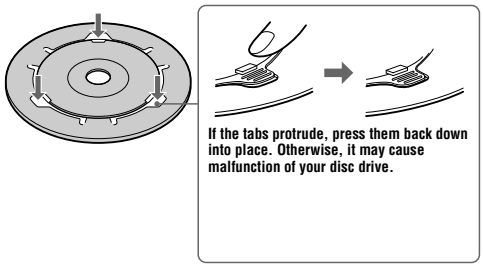
❶ Slide the disc into the inner groove and under two of the tabs on the inner circle of adaptor in the numbered order.


Printed side of the disc (The other side is recordable side.)
Printed side of the adaptor (SONY is printed on this side and the other side is the luster side.)

❷ Pull the third tab out away from the disc and the disc will slip into place. Release the third tab and the disc will be held firmly in place.



❸ Check that the disc is set correctly in the grooves of the adaptor, that all the tabs are even with the surface of the adaptor, and that the disc is not protrude from the adaptor.



Notes

- The supplied adaptor may not be used with your disc drive. For details, refer to the operating instructions of the disc drive.
- Use the adaptor at a low-speed (8-speed or lower).
- Do not place the adaptor under direct sunlight or near the heat.
- The adaptor is only used with Mavica discs. This cannot be used with other 8 cm CD-Rs/CD-RWs.

Preparing for viewing images on CD-ROM drives (FINALIZE)

You can play back the disc recorded with this camera on CD-ROM drives. You have to execute the finalization before viewing images on a CD-ROM drive. A disc that has not been executed the finalization cannot be read with CD-ROM drives.

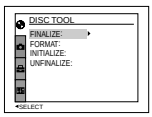
What is finalization?

- The finalization is required to view images on a CD-ROM drive.
- You can record new images on the finalized disc if you execute the initialization on it again. The initialization will be automatically executed when the finalization is executed using the camera. You have to execute the finalization to view new images on a CD-ROM drive. Each time you execute the finalization, approximate 13 MB of the disc will decrease. We recommend that you execute the finalization onto compiled data at a time.
- You can execute the finalization onto the disc later, even if you remove it from the camera.
- The CD-ROM drive must conform to the MultiRead type to read the disc that was finalized.

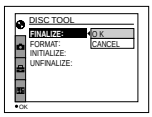
Executing the finalization

❶ Set the mode dial to SET UP.
The setup screen appears on the LCD screen.

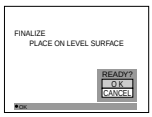
❷ Select [ ] (DISC TOOL) with ▲/▼ on the control button, then press ▶.



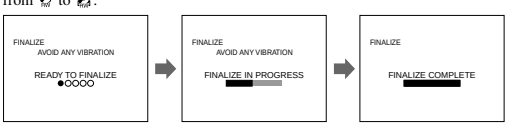
❸ Select [FINALIZE] with ▲/▼ on the control button, then press ▶.



❹ Select [OK] with ▲ on the control button, then press ●.
"FINALIZE PLACE ON LEVEL SURFACE" appears on the LCD screen. Be sure to avoid any vibration during the finalization.



❺ Select [OK] with ▲ on the control button, then press ●.
Finalization starts and the disc remaining indicator changes from ◐ to ◯, or from ◔ to ◯.



To cancel the finalization

Select [CANCEL] with ▼ on the control button in step ❹ or ❺, then press the center ●. Once the finalization starts, you cannot cancel it.

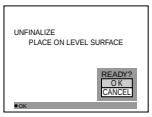
Notes

- It takes for about one minute to execute the finalization. Do not shake or jar the camera during this operation. Place the camera on a stable surface during the finalization.
- When you execute the finalization, we recommend that you use the external power source (page 13).

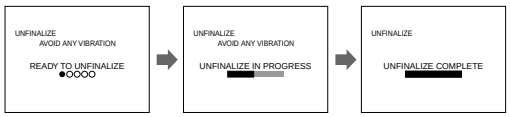
Canceling the finalization (UNFINALIZE) (only for CD-RWs)

When using CD-RWs, you can cancel the last-executed finalization. Once you cancel it, the disc space for executing the finalization is recovered.

❶ Set the mode dial to the , S, A, M, SCN, or .
"UNFINALIZE PLACE ON LEVEL SURFACE" appears on the LCD screen. Be sure to avoid any vibration during the unfinalization.



❷ Select [OK] with ▲ on the control button, then press ●.
Unfinalization starts and the disc remaining indicator changes from to .



To cancel the unfinalization

Select [CANCEL] with ▼ on the control button in step ❷, then press the center ●. When it is canceled, you can continuously record an image on the CD-RW.

To unfinalize after canceling the unfinalization

Set the mode dial to SET UP, then execute [UNFINALIZE] from [ ] (DISC TOOL) in the setup settings (page 84).

Notes

- Unfinalization cannot be executed when you record a new image or edit an image on the CD-RW after executing the finalization.
- It takes about one minute to execute the unfinalization. Do not shake or jar the camera during this operation. Place the camera on a stable surface during the unfinalization.

Tip
You can also execute the unfinalization using [ ] (DISC TOOL) in the setup settings (page 84).

Notes

- Operations are not guaranteed if you connect two or more USB equipment to a single computer at the same time (except for the USB keyboard and mouse which are provided as standard), or when using a hub.
- Depending on the type of USB equipment that is used simultaneously, some equipment may not operate.
- Operations are not guaranteed for all the recommended computer environments mentioned above.

C Viewing images with a CD-R/CD-RW drive (page 41)

You do not need to finalize the disc. You have to install the software, DirectCD included in the supplied CD-ROM. For details on Windows environment, refer to the software operating instructions of DirectCD.

<<Recommended Macintosh environment>>

You cannot view images on a Macintosh computer by USB connection.
Install the driver, Adaptec UDF Volume Access included in the supplied CD-ROM into your computer and finalize the disc to view images.

Macintosh computer with the Mac OS 8.5.1/8.6/9.0 standard installation
QuickTime 3.0 or later must be installed.

Note
Operations are not guaranteed for all the recommended computer environments mentioned above.

Notes on using your computer

Software

- Data recorded with your camera is stored in the following formats. Make sure that applications that support these file formats are installed on your computer.
  - — Still image (except TEXT mode, uncompressed mode and Clip Motion): JPEG format
  - — Moving image/Voice memo: MPEG format
  - — Uncompressed mode still image: TIFF mode
  - — TEXT mode/Clip Motion: GIF format.
- Depending on your application software, the file size may increase when you open a still image file.
- When you copy the image to the camera from your computer, which was modified with a retouching software and was converted to another file format, the "FILE ERROR" message may appear and you may be unable to open the image.
- Depending on your application software, only the first frame of the Clip Motion file may be played back.

Communications with your computer (for Windows only)

Communications between your camera and your computer may not recover after recovering from Suspend or Sleep.

Viewing images using a computer

You can view data recorded with your camera on a computer. This section describes the general method for viewing images on a computer and installing the driver into a computer. Be sure to also see the operation manuals for your computer and application software. To view images on the CD-RW using a CD-ROM drive or CD-R drive, the drive must conform to the MultiRead type. Whether your drive conforms to the MultiRead type or not, consult the drive manufacturer.

<<Recommended Windows environment>>

You can view images on a Windows computer in the following three ways, A, B, and C. Check the computer environment below, then follow the procedures described on pages 37 to 42.

A Viewing images with a CD-ROM drive (page 37)

Finalize the disc beforehand (page 32).

OS:Microsoft Windows 98, Windows 98SE, Windows Me, Windows 2000 Professional
The above OS is required to be installed at the factory.
Operation is not assured in an environment upgraded to the operating systems described above.

B Viewing images with a computer connected with the USB cable (page 38)

There are two ways to make the USB connection, which are the normal connection and the PTP connection (page 86). This is set using [USB CONNECT] in the setup settings. However, any OS does not conform to [PTP] as of February 2001. Here describes the way using the [NORMAL] setting.

You do not need to finalize the disc. You have to install the USB driver and the software, DirectCD included in the supplied CD-ROM. For details on DirectCD, refer to the software operating instructions of DirectCD.

OS:Microsoft Windows 98, Windows 98SE, Windows Me, Windows 2000 Professional
The above OS is required to be installed at the factory.
Operation is not assured in an environment upgraded to the operating systems described above.
CPU:MMX Pentium 200 MHz or faster
The USB connector must be provided as standard.
The CD-ROM drive is required for installing the USB driver.

- Windows and ActiveMovie, DirectShow are either registered trademarks or trademarks of Microsoft Corporation in the United States and /or other countries.
- Macintosh and Mac OS, QuickTime are either registered trademarks or trademarks of Apple Computer, Inc.
- DirectCD is a trademark of Adaptec, Inc.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, "™" and "®" are not mentioned in each case in this manual.

Viewing images on a Windows computer

When playing back moving images, Real Player or Windows Media Player must be installed into your computer.

A Viewing images with a CD-ROM drive
Finalize the disc beforehand (page 32).

E.g., for Windows Me users

❶ Start up your computer and insert the disc into the CD-ROM drive of your computer.

❷ Open [My Computer] and double click the drive recognizing the disc (Example:[CD-ROM (D:)]).

❸ Double-click the desired data file.
For the detailed folder and file names, see "Image file storage destinations and image file names" (page 43).

Desired file type	Double-click in this order
Still image	"DCIM" folder → "100MSDCF" folder → Image file
Moving image*	"MSSONY" folder → "MOML0001" folder → Image file
Audio*	"MSSONY" folder → "MOMLV100" folder → Audio file
Clip Motion image	"DCIM" folder → "100MSDCF" folder → Image file
E-mail image Tiff image (uncompressed)	"MSSONY" folder → "IMCIF100" folder → Image file

* Copying a file to the hard disk of your computer before viewing is recommended. If you play back the file directly from the disc, the image and sound may break off.

B Viewing images with a computer connected with the USB cable

Once you install DirectCD included in the supplied CD-ROM, you do not need to finalize the disc to view images on the disc.
You can exchange data between the camera and a computer using the supplied USB cable and CD-ROMs.

Installing the USB driver

Do not connect the camera to the computer yet.

Before connecting your camera to your computer, install the USB driver to the computer. The USB driver is contained in the supplied CD-ROM (SPVD-006).
If the drive is not recognized, see "Troubleshooting" on page 93.

E.g., for Windows Me users

1 Turn on your computer and allow Windows to load.
Do not connect the USB cable in this step.

2 Insert the supplied CD-ROM (SPVD-006) in the CD-ROM drive of your computer
If the setup screen of DirectCD appears, click [Finish] on the screen.

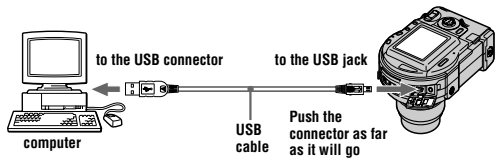
3 Open [My Computer] on Windows and right-click the CD-ROM drive (Example: CD-ROM (D:)), then select [Open (O)].
The file list of the CD-ROM appears. If other application software works, quit the application software.

4 Double-click the [SONY USB] folder in the file list, and then double-click [SET UP].
The installer of device driver starts and the necessary files are automatically copied to the computer.

5 Restart the computer.
If the message appears after the installation to verify that you restart the computer, restart the computer. In other cases, restart it manually.

6 Prepare the camera before connecting the computer.
- Connect the AC power adaptor to the camera.
- Turn on the camera.

7 Connect the USB jack on your camera with the USB connector on your computer using the supplied USB cable.



8 The computer automatically recognizes the camera.
Open [My Computer], the newly recognized drive (Example: (E:)) is added. Installing driver is complete.

9 Insert the disc into the camera, connect the AC power adaptor to the camera, then turn on the power of the camera.
Go to "Viewing images" below. If you remove the disc without viewing an image, be sure to read "Before disconnecting the USB cable" on page 40.

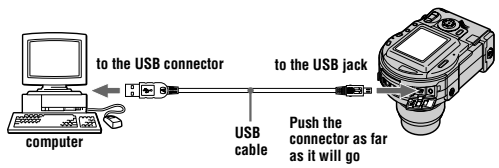
Viewing images

When you view images on the disc which was not finalized, you have to install DirectCD included in the supplied CD-ROM. For details on DirectCD, refer to the software operating instructions of DirectCD.

E.g., for Windows Me users

1 Turn on your computer and allow Windows to load.

2 Connect the USB jack on your camera with the USB connector on your computer using the supplied USB cable.



3 Insert the disc into the camera, connect the AC power adaptor to the camera, then turn on the power of the camera.
"USB MODE" appears on the LCD screen of the camera.

4 Open [My Computer] on Windows and double-click the newly recognized drive. (Example: [CD Mavica (E:)])
The folders inside the disc are displayed, and the disc cover of the camera will be locked. To remove the disc, carry out the operation for removing the disc described on the software operating instructions of DirectCD.
If the drive is not recognized, see "Troubleshooting" on page 93.

5 Select and double-click the desired image/sound file from the folder.
For the detailed folder and file names, see "Image file storage destinations and image file names" (page 43).

Desired file type	Double-click in this order
Still image	"DCIM" folder → "100MSDCF" folder → Image file
Moving image*	"MSSONY" folder → "MOML0001" folder → Image file
Audio*	"MSSONY" folder → "MOMLV100" folder → Audio file
Clip Motion image	"DCIM" folder → "100MSDCF" folder → Image file
E-mail image Tiff image (uncompressed)	"MSSONY" folder → "IMCIF100" folder → Image file

* Copying a file to the hard disk of your computer before viewing is recommended. If you play back the file directly from the disc, the image and sound may break off.

Before you remove the disc, be sure to read "Before disconnecting the USB cable" on page 40.

Copying a file in the disc to a computer

Select the desired file, and drag it to the desired drive or folder.

Copying a file in a computer to a disc

Once you install DirectCD included in the supplied CD-ROM into your computer, you can drag and drop the desired file to the disc. To view the image using this camera, the file name format must be as follows, "DSC0□□□□.JPG".
For details, see "Image file storage destinations and image file names" (page 43).

Before disconnecting the USB cable

Before disconnecting the USB cable, you must carry out the operation for removing the disc. This operation is described in "Removing the disc" of the software operating instructions of DirectCD.
The data in the disc may be broken if you do not carry out this operation.
Refer to the procedure below.

1 Remove the disc.
For details, refer to the software operating instructions of DirectCD.

2 When using Windows Me, Windows 2000 Professional:

① Select the applicable drive from [ ] on the task bar, then stop it.

② After the message informing you that the drive has been removed safely appears, disconnect the USB cable.

When using other operating systems than above:
Simply, disconnect the USB cable.

C Viewing images using a CD-R/CD-RW drive

You do not need to finalize the disc. You have to install DirectCD included in the supplied CD-ROM. For details on DirectCD, refer to the software operating instructions of DirectCD.

Viewing images on a Macintosh computer

Viewing images with a CD-ROM drive

Finalize the disc beforehand (page 32). You have to install the driver, Adaptec UDF Volume Access included in the supplied CD-ROM (SPVD-006).

1 Start up your computer and allow the Mac OS to load.

2 Insert the supplied CD-ROM (SPVD-006) in the CD-ROM drive of your computer.

3 Double-click the CD-ROM drive icon to open the window.

4 Double-click the icon of the hard disk containing the OS to open the window.

5 Move the driver, "Adaptec UDF Volume Access" from the window opened in step 3 to the "System Folder" folder in the window opened in step 4 (drag and drop).

6 When "Put these items into the Extensions folder?" appears, click "OK."

7 Restart your computer.

Viewing images

1 Start up your computer and insert the disc into the CD-ROM drive of your computer.

❷ Double click the disc folder.

❸ Double-click the desired data file.
For the detailed folder and file names, see “Image file storage destinations and image file names” (page 43).

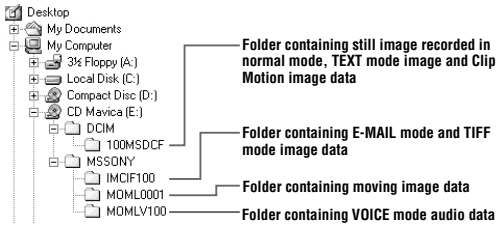
Desired file type	Double-click in this order
Still image	“DCIM” folder → “100MSDCF” folder → Image file
Moving image*	“MSSONY” folder → “MOML0001” folder → Image file
Audio*	“MSSONY” folder → “MOMLV100” folder → Audio file
Clip Motion image	“DCIM” folder → “100MSDCF” folder → Image file
E-mail image Tiff image (uncompressed)	“MSSONY” folder → “IMCIF100” folder → Image file

* Copying a file to the hard disk of your computer before viewing is recommended. If you play back the file directly from the disc, the image and sound may break off.

Image file storage destinations and image file names

Image files recorded with your camera are grouped in folders by recording mode. The meanings of the file names are as follows. □□□□ stands for any number within the range from 0001 to 9999.

E.g., for Windows Me users (The drive recognizing the camera is “E.”)



Folder	File	Meaning
100MSDCF	DSC0□□□□.JPG	• Still image file recorded normally • Still image file recorded in — E-MAIL mode (page 59) — TIFF mode (page 62) — VOICE mode (page 60)
	CLP0□□□□.GIF	• Clip Motion file recorded in NORMAL mode (page 64)
	CLP0□□□□.THM	• Index image file of Clip Motion file recorded in NORMAL mode
	MBL0□□□□.GIF	• Clip Motion file recorded in MOBILE mode (page 64)
	MBL0□□□□.THM	• Index image file of Clip Motion file recorded in MOBILE mode
	TXT0□□□□.GIF	• Still image file recorded in TEXT mode (page 61)
	TXT0□□□□.THM	• Index image file of still image file recorded in TEXT mode

Folder	File	Meaning
IMCIF100	DSC0□□□□.JPG	• Small-size image file recorded in E-MAIL mode (page 59)
	DSC0□□□□.TIF	• Uncompressed image file recorded in TIFF mode (page 62)
MOML0001	MOV0□□□□.MPG	• Moving image file recorded normally
MOMLV100	DSC0□□□□.MPG	• Audio file recorded in VOICE mode (page 60)

The numerical portions of the following files are the same.
—A small-size image file recorded in E-MAIL mode and its corresponding image file
—An uncompressed image file recorded in TIFF mode and its corresponding image file
—An audio file recorded in VOICE mode and its corresponding image file
—An image file recorded in TEXT mode and its corresponding index image file
—An image file recorded with Clip Motion and its corresponding index image file

Tip
The digital still camera saves recorded images as digital data. The format of the saved data is called as the file format. The formats that can be used with this camera are as follows:

JPEG format
Most digital still cameras, operating systems of computers, and browser software adopt this format. This format is able to compress files without appreciable deterioration. However, if the image is compressed and saved on repeated occasions, the image will deteriorate. This camera records still images using the JPEG format for normal recording.

GIF format
Using this format, the image will not deteriorate even if the image is compressed and saved on repeated occasions. This format limits the number of colors to 256 colors. This camera records still images using the GIF format in Clip Motion (page 64) or TEXT mode (page 61).

TIFF format
Stores shooting images without compression, so the image does not deteriorate. Most of operating systems and applications correspond to this format. This camera records still images using the TIFF format for the TIFF mode (page 62).

MPEG format
This format is very typical for moving images. This camera records audio using the MPEG format for the moving images recording and the VOICE mode (page 60).

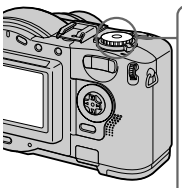
Advanced operations

Before performing advanced operations

This section describes the basic control methods that are frequently used for “Advanced operations.”

How to use the mode dial

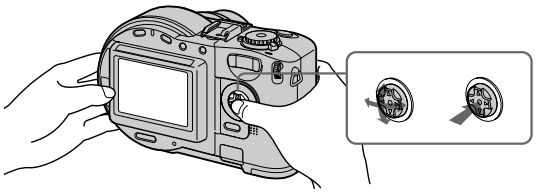
The mode dial switches the function which is used for recording, playback, or editing. The SET UP position changes the settings of infrequently-used items (page 84). Set the dial as follows before starting to operate your camera.



📷: To record still images, VOICE memos
S: To record in the shutter speed priority mode
A: To record in the aperture priority mode
M: To record with the shutter speed and aperture set manually
SCN: To record in the SCENE SELECTION mode
SET UP: To display the setup items
🎞: To record moving images or Clip Motion images
▶: To play back or edit images

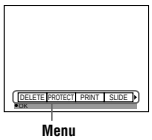
How to use the control button

When the menu or setup screen is displayed, the control button is used to select the buttons, images and menu items displayed on the LCD screen of your camera and modify the settings. The operation methods that are frequently used for "Advanced operations" are described below.



Turning on/off the operation buttons (menu) on the LCD screen

Press MENU to display/clear the menu on the LCD screen.



Menu

Setting up the items in the setup or menu

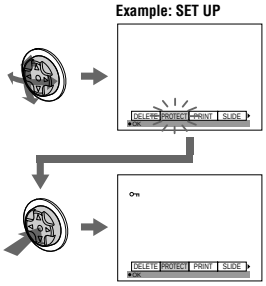
❶ Set the mode dial to SET UP so that the setup screen appears, or press MENU so that the menu appears.

❷ When the mode dial is set to SET UP or ▶:

① Press ▲/▼/◀/▶ on the control button to select the item or setting you want to set up. The selected setting turns yellow.

② Press the center ● to enter the item.

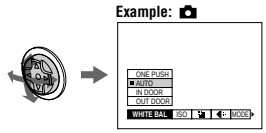
Example: SET UP



When the mode dial is set to 📷, S, A, M, SCN, or 🎞:

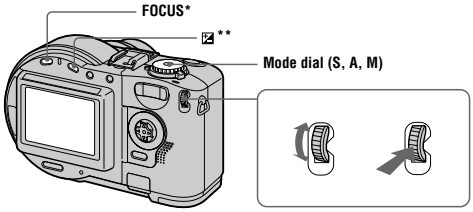
Press ▲/▼/◀/▶ on the control button to select the setting of the item.
The selected setting turns yellow, and the setup is complete.

Example: 📷



How to use the jog dial

The functions which are used frequently are set up using the jog dial and the following direct buttons. The jog dial is used to change the value in manual adjustments.



* This button is available when the mode dial is set to 📷, S, A, M, SCN, or 🎞.

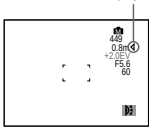
** This button is available when the mode dial is set to 📷, S, A, SCN, or 🎞.

❶ Press FOCUS or ⊡, or set the mode dial to S, A, or M.

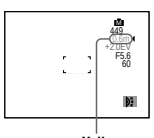
❷ Turn the jog dial to select the item or value number you want to adjust.

• When the indication ◀ at the right end on the LCD screen is in yellow, you can select the item. In such cases, go to step ❸.

Yellow



• When the value number at the right end on the LCD screen is in yellow, you can adjust the value. (When you press FOCUS, the ⊡ mark appears on value number position.)
When you adjust only the value, the adjustment is complete.



Yellow

❸ Press the jog dial.
The value number turns to yellow. To adjust the value, repeat step ❷.

Viewing the next/previous image using the jog dial during playback

When viewing an image in single-image mode (page 72), you can easily view the next/previous image by turning the jog dial.

Menu settings

Menu items that can be modified differ depending on the positions of the mode dial. The LCD screen shows only the items you can operate at the moment. Initial settings are indicated with ■.

When the mode dial is set to 📷/S/A/M/SCN

Item	Setting	Description
WB (WHITE BAL)	ONE PUSH ■AUTO IN DOOR OUT DOOR	Sets the white balance (page 68).
ISO	400 200 100 ■AUTO	Selects the ISO film speed. When recording under dark situations or recording a fast-moving subject, use a high-number setting. When you record high-quality images, use a low-number setting (except when the mode dial is set to SCN).
(IMAGE SIZE)	**MVC-CD200** ■1600×1200 1600 (3:2) 1024×768 640×480 **MVC-CD300** ■2048×1536 2048 (3:2) 1600×1200 1280×960 640×480	Selects the image size when recording still images (page 53).

Item	Setting	Description
(P. QUALITY)	■FINE	Records still images in the fine image quality mode.
	STANDARD	Records still images in the standard image quality mode.
MODE (REC MODE)	TIFF	Records a TIFF (uncompressed) file in addition to the JPEG file (page 62).
	TEXT	Records a GIF file in black-and-white (page 61).
	VOICE	Records an audio file (with a still image) in addition to the JPEG file (page 60).
	E-MAIL	Records a small-size (320×240) JPEG file in addition to the selected image size (page 59).
	EXP BRKTG (MVC-CD300 only)	Records three images with the exposure value of each image shifted a little (page 63).
	BURST (MVC-CD300 only)	Records three images continuously (page 59).
	■NORMAL	Records an image using the normal recording mode.
± (FLASH LEVEL)	HIGH	Makes the flash level higher than normal.
	■NORMAL	Normal setting.
	LOW	Makes the flash level lower than normal.
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■OFF	Sets the image special effects (page 69).
(SHARPNESS)	+2 to –2	Adjusts the sharpness of the image. The indicator appears (except when the setting is 0).

When the mode dial is set to ([MOVING IMAGE] is set to [MPEG MOVIE] in the setup settings.)

Item	Setting	Description
WB (WHITE BAL)	ONE PUSH ■AUTO IN DOOR OUT DOOR	Sets the white balance (page 68).
(IMAGE SIZE)	320 (HQ) 320×240 ■160×112	Selects the MPEG image size when recording moving images (page 53).

Item	Setting	Description
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■OFF	Sets the image special effects (page 69).

When the mode dial is set to ([MOVING IMAGE] is set to [CLIP MOTION] in the setup settings.)

Item	Setting	Description
WB (WHITE BAL)	ONE PUSH ■AUTO IN DOOR OUT DOOR	Sets the white balance (page 68).
(IMAGE SIZE)	■NORMAL MOBILE	Selects the Clip Motion image size (page 53).
± (FLASH LEVEL)	HIGH	Makes the flash level higher than normal.
	■NORMAL	Normal setting.
	LOW	Makes the flash level lower than normal.
PFX (P. EFFECT)	SOLARIZE B&W SEPIA NEG.ART ■OFF	Sets the image special effects (page 69).
(SHARPNESS)	+2 to –2	Adjusts the sharpness of the image. The indicator appears (except when the setting is 0).

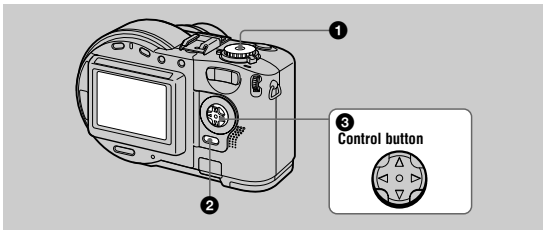
When the mode dial is set to

Item	Setting	Description
DELETE	OK	Deletes the displayed image (page 77).
	CANCEL	Cancels deleting of the image.
PROTECT	–	Protects images against accidental erasure (page 78).
PRINT	–	Marks the print mark on still images (page 81).

Item	Setting	Description
SLIDE*	INTERVAL	Sets the slide show interval. ■5 sec/10 sec/30 sec/1 min
	REPEAT	A slide show can be repeated for up to approx. 20 minutes. ■ON/OFF
	START	Starts the slide show.
	CANCEL	Cancels the slide show.
RESIZE*	**MVC-CD200** 1600×1200 1024×768 640×480 CANCEL **MVC-CD300** 2048×1536 1600×1200 1280×960 640×480 CANCEL	Changes the recorded image size (page 80).
ROTATE*	–	Rotates the still image (page 75).

* Only in single-image mode.

Setting the image size (IMAGE SIZE)



1 Set the mode dial to , S, A, M, SCN, or .

2 Press MENU.
The menu appears.

3 Select the desired image size with ▲/▼ on the control button from [ ] (IMAGE SIZE).

Still image sizes:
MVC-CD200: 1600×1200, 1600 (3:2)*, 1024×768, 640×480
MVC-CD300: 2048×1536, 2048 (3:2)*, 1600×1200, 1280×960, 640×480

* The image is recorded in the ratio of three to two to fit the printing paper size. Using this image size, the margin of an image is not printed out. However, the slight amount of the upper and lower black portions are displayed on the LCD screen.

Moving image (MPEG movie) sizes:
320 (HQ)*, 320×240, 160×112

* High Quality mode

Moving image (Clip Motion) sizes:
MOBILE (80×72), NORMAL (160×120)

The number of images* or the time that you can record on a disc**

MVC-CD200

Image size	Quality	
	STANDARD	FINE
1600×1200	Approx. 237	Approx. 132
1600 (3:2)	Approx. 237	Approx. 132
1024×768	Approx. 500	Approx. 321
640×480	Approx. 1300	Approx. 663
320 (HQ)	Approx. 355 (15) sec **	
320×240	Approx. 1420 (60) sec **	
160×112	Approx. 5400 (240) sec **	
MOBILE	Approx. 1430	
NORMAL	Approx. 560	

MVC-CD300

Image size	Quality	
	STANDARD	FINE
2048×1536	Approx. 147	Approx. 81
2048 (3:2)	Approx. 147	Approx. 81
1600×1200	Approx. 237	Approx. 132
1280×960	Approx. 349	Approx. 197
640×480	Approx. 1300	Approx. 663
320 (HQ)	Approx. 355 (15) sec **	
320×240	Approx. 1420 (60) sec **	
160×112	Approx. 5400 (240) sec **	
MOBILE	Approx. 1430	
NORMAL	Approx. 560	

* When MODE (REC MODE) is set to NORMAL.

** The numbers in parentheses indicate the maximum recording time in continuous recording

Note

The number of images recordable on a disc may decrease depending on conditions.

Tip

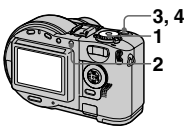
The size of the image is indicated by the pixel unit. The higher the number of pixels, the more information is included. So, an image that is saved using a large number of pixels is suitable for a large-format print and one that is saved using a smaller number of pixels is suitable for attaching to an E-mail. Normally, an image is recorded in the ratio of four to three to fit the monitor ratio. This camera can also record the image in the ratio of three to two to accommodate the most common printing paper size. This is the same ratio as the one used in photo-developing shops.

2048×1536 **2048 (3:2)**

Recording with the exposure fixed (AE LOCK)

Mode dial: /S/A/SCN

Once you press AE LOCK, the exposure, now captured, is fixed. For instance, this function is convenient in the following use:
Measure the exposure of the desired portion of the subject using the spot light-metering function and fix its exposure value by pressing AE LOCK. Then, recompose the picture.



1 Set the mode dial to , S, A, or SCN.

2 Target the subject that has desired exposure value, then press AE LOCK.
The exposure is fixed and the AE-L mark appears.

3 Target the subject you want to record and press and hold the shutter button halfway down.
The focus is automatically adjusted.

4 Press down the shutter button.

To release AE LOCK

Carry out one of the followings:
- Press AE LOCK again after step **2**.
- Release your finger from the shutter button after step **3**.
- Press down the shutter button in step **4**.

Recording with the manual adjustments

Mode dial: S/A/M

Shutter speed priority mode

Once the shutter speed is adjusted manually, the aperture will be automatically adjusted to the suitable value to attain correct exposure according to the brightness of the subject. Using the higher shutter speed, you can record a fast-moving subject with its motion frozen. And using the lower shutter speed, you can record the flow motion of a moving subject.

1 Set the mode dial to S.

2 Select a shutter speed with the jog dial, then press the jog dial.
The shutter speed can be selected from 8" to 1/800 (MVC-CD200) or 8" to 1/1000 (MVC-CD300) by 1/3 step.

Aperture priority mode

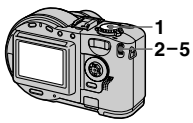
Once the aperture is adjusted manually, the shutter speed will be automatically adjusted to the suitable value to attain correct exposure according to the brightness of the subject. As selecting a narrow aperture, the lens iris opens. Using a narrow aperture, you can record a subject with its background unclear. And using a wide aperture, you can record both the subject and the background stand out clearly.

1 Set the mode dial to A.

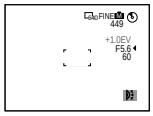
2 Select an aperture value with the jog dial, then press the jog dial.
The aperture value can be selected from F2.8 to F11 (MVC-CD200) or from F2 to F8 (MVC-CD300) by 1/3 step.

Manual exposure mode

You can manually adjust the shutter speed and aperture values to achieve the desired shooting condition according to your purpose. The exposure value appears on the LCD screen (page 67). And you can also adjust this value according to your taste. 0 EV is the most suitable value set by the camera.



1 Set the mode dial to M.



2 Select the aperture value indication with the jog dial, then press the jog dial.

3 Select the aperture value with the jog dial, then press the jog dial.

4 Select the shutter speed value indication with the jog dial, then press the jog dial.

5 Select the shutter speed value with the jog dial.
For details on available values, see "Shutter speed priority mode" on page 56, or "Aperture priority mode" on page 56.

Note

If the setting is not appropriate in aperture priority mode, shutter speed priority mode, or manual exposure mode, the setting value indicator on the LCD screen flashes when the shutter button is pressed halfway down. You can record in this setting, we, however, recommend that you adjust the flashed-value again.

Recording images according to shooting conditions (SCENE SELECTION)

Mode dial: SCN

This camera has preset three SCENE SELECTION modes. Each mode is suitable for the following situations; night scene, landscape, and portrait.

1 Set the mode dial to SET UP.
The setup screen appears.

2 Select [ ] (CAMERA) with ▲/▼, [SCENE SELECTION] with ▶/▲/▼, then press ▶.

3 Select the desired setting, then press ●.

TWILIGHT mode
You can record the subject without losing the dark atmosphere of the surroundings. We recommend that you use a tripod to prevent camera-shake as the shutter speed is set slow in this mode.

LANDSCAPE mode
Focuses only on a distant subject to record landscapes, etc.

PORTRAIT mode
Suits for portrait recordings. Backgrounds blurred away, and the frontward person is sharpened.

4 Set the mode dial to SCN.
The selected setting is loaded.

To cancel the SCENE SELECTION function

Set the mode dial to , S, A, M, SET UP, , or .

Notes

- You can focus only on distant subjects in LANDSCAPE mode.
- Set the forced flash when you use the flash in the following modes:
  —TWILIGHT mode
  —LANDSCAPE mode
- When using the SCENE SELECTION mode, the AF illuminator (page 25) emits in the following conditions:
  —TWILIGHT mode: when the flash mode is set to the forced flash mode
  —PORTRAIT mode: when the subject is under dark situations
- When the LANDSCAPE mode is selected, the AF illuminator cannot be used.

Tip

Under normal recording conditions, the camera automatically makes various adjustments, such as those for the focus, iris, exposure, and white balance, as it shoots. However, you may not be able to carry out your desired shooting depending on shooting conditions. The SCENE SELECTION function provides you with near-optimum adjustments to suit your shooting situation.

MVC-CD300

Image size	Quality	
	STANDARD	FINE
2048×1536	Approx. 138	Approx. 79
2048 (3:2)	Approx. 138	Approx. 79
1600×1200	Approx. 216	Approx. 126
1280×960	Approx. 306	Approx. 182
640×480	Approx. 855	Approx. 524

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

Adding audio files to still images (VOICE)

Mode dial: /S/A/M/SCN

In the VOICE mode, the audio is also recorded at the same time as recording a still image. You can vividly record the situation with audio.

1 Set the mode dial to , S, A, M, or SCN.

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◀/▶, [VOICE] with ▲/▼.

4 Record the image.
If you press and release the shutter button, sound is recorded for five seconds.
If you hold down the shutter button, sound is recorded until you release the shutter button for up to 40 seconds.

The number of images that you can record on a disc in VOICE mode*

MVC-CD200

Image size	Quality	
	STANDARD	FINE
1600×1200	Approx. 203	Approx. 121
1600 (3:2)	Approx. 203	Approx. 121
1024×768	Approx. 369	Approx. 262
640×480	Approx. 677	Approx. 451

MVC-CD300

Image size	Quality	
	STANDARD	FINE
2048×1536	Approx. 133	Approx. 77
2048 (3:2)	Approx. 133	Approx. 77
1600×1200	Approx. 203	Approx. 121
1280×960	Approx. 280	Approx. 172
640×480	Approx. 677	Approx. 451

* When recording 5-second audio.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

Recording three images continuously (BURST) (only for MVC-CD300)

Mode dial: /S/A/M/SCN

This mode is used for a continuous recording. Press the shutter button in this mode, the camera records three images continuously.

1 Set the mode dial to , S, A, M, or SCN.

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◀/▶, [BURST] with ▲/▼.

4 Record the image.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

Notes

- You cannot use the flash in this mode.
- During recording in this mode, the image is not displayed on the LCD screen. Make the composition before pressing the shutter button.
- The recording interval is approximate 0.6 second.
- The shutter speed more than 1" cannot be selected in BURST mode.

Recording still images for e-mail (E-MAIL)

Mode dial: /S/A/M/SCN

In the E-MAIL mode, a small-size image which is suitable for e-mail transmission is also recorded at the same time as recording a normal still image. (The size of the normal still image is set using [ ] (IMAGE SIZE) in the menu settings (page 53).)

1 Set the mode dial to , S, A, M, or SCN.

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◀/▶, [E-MAIL] with ▲/▼.

4 Record the image.

The number of images that you can record on a disc in E-MAIL mode

MVC-CD200

Image size	Quality	
	STANDARD	FINE
1600×1200	Approx. 216	Approx. 126
1600 (3:2)	Approx. 216	Approx. 126
1024×768	Approx. 416	Approx. 285
640×480	Approx. 855	Approx. 524

Recording text documents (TEXT)

Mode dial:

The TEXT mode is suitable for recording a document to emphasize its character by the black and white colors. The LCD screen also turns to black and white, and the image is recorded in the GIF format.

1 Set the mode dial to .

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◀/▶, [TEXT] with ▲/▼.

4 Record the image.

The number of images that you can record on a disc in TEXT mode*

MVC-CD200

Image size	
1600×1200	Minimum 330
1600 (3:2)	Minimum 361
1024×768	Minimum 618
640×480	Minimum 974

MVC-CD300

Image size	
2048×1536	Minimum 221
2048 (3:2)	Minimum 244
1600×1200	Minimum 330

Image size	
1280×960	Minimum 462
640×480	Minimum 974

* The maximum number of recordable images depends on the document condition, such as the amount of text portions.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

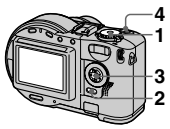
Notes

- If the subject is not evenly illuminated, you may be unable to record a clear image.
- Reading and writing data takes more time than normal image recording.
- When the mode dial is set to M or SCN, the image may be bleached out or may be turned black.
- The number of recordable images is the same regardless of whether [ ] (P. QUALITY) is set to [STANDARD] or [FINE].

Recording still images as uncompressed files (TIFF)

Mode dial: /S/A/M/SCN

Records the images without compression, so the image does not deteriorate. Images recorded in this mode are suitable for printing with a high-quality image. The JPEG (compressed) format image is also recorded with the TIFF format image.



1 Set the mode dial to , S, A, M, or SCN.

2 Press MENU.
The menu appears.

3 Select [MODE] (REC MODE) with ◄/►, [TIFF] with ▲/▼.

4 Record the image.

The number of images that you can record on a disc in TIFF mode

MVC-CD200

Image size	Quality	
	STANDARD	FINE
1600×1200	Approx. 20	Approx. 19
1600 (3:2)	Approx. 22	Approx. 21

MVC-CD300

Image size	Quality	
	STANDARD	FINE
2048×1536	Approx. 12	Approx. 11
2048 (3:2)	Approx. 14	Approx. 13

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **3**.

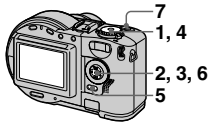
Notes

- JPEG images are recorded in the image size selected by the [ ] (IMAGE SIZE) menu (page 53). TIFF images are recorded in [1600×1200] (MVC-CD200) or [2048×1536] (MVC-CD300) size other than when [1600 (3:2)] (MVC-CD200) or [2048 (3:2)] (MVC-CD300) is selected.
- Writing data takes more time than in normal recording.

Recording three images with the exposure shifted (only for MVC-CD300) (EXP BRKTG)

Mode dial: /S/A/M/SCN

The camera continuously records three images with each exposure value shifted. The exposure compensation value can be set between ±1.0 EV from the correct exposure value by 1/3 EV.



1 Set the mode dial to SET UP.
The setup screen appears.

2 Select [ ] (CAMERA) with ▲/▼, [BRACKET STEP] with ►/▲/▼, then press ►.

3 Select the desired bracket step value with ▲/▼, then press ●.
±1.0EV: Shifts the exposure value by plus or minus 1.0EV.
±0.7EV: Shifts the exposure value by plus or minus 0.7EV.
±0.3EV: Shifts the exposure value by plus or minus 0.3EV.

4 Set the mode dial to , S, A, M, or SCN.

5 Press MENU.
The menu appears.

6 Select [MODE] (REC MODE) with ◄/►, [EXP BRKTG] with ▲/▼.

7 Record the image.

To return to normal recording mode

Select [NORMAL] with ▲/▼ in step **6**.

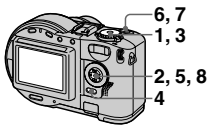
Notes

- You cannot use the flash in this mode.
- During recording, the image is not displayed on the LCD screen. Make the composition before pressing the shutter button.
- Focus and white balance are adjusted against the first image and this setting is also used for the other images.
- When the exposure is manually adjusted, the adjusted value is used for the center value.
- The recording interval is approximate 0.6 second.

Creating Clip Motion Files

Mode dial:

Clip Motion is an animation function that plays back still images in succession. The images are stored in GIF format, which is convenient for creating home pages or attaching images to an e-mail.



1 Set the mode dial to SET UP.
The setup screen appears.

2 Select [ ] (CAMERA) with ▲/▼, [MOVING IMAGE] with ►/▲/▼, [CLIP MOTION] with ▲/▼, then press ●.

3 Set the mode dial to .

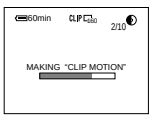
4 Press MENU.
The menu appears.

5 Select the desired mode from [ ] (IMAGE SIZE) with ▲/▼.

NORMAL (160×120)
Clip Motion of up to 10 frames can be recorded.
This is suitable for use on home pages, etc.

MOBILE (80×72)
Clip Motion of up to 2 frames can be recorded.
This is suitable for use with portable data terminals.

6 Record the image for the first frame.



Before carrying out step **8**, the images are temporarily stored in memory. These images are not recorded on the disc, yet.

7 Record the image for the next frame.
Image recording can be repeated up to the maximum number of recordable frames.

8 Press ●.
All the frame images are recorded on the disc.

To delete some of the frame images or all the frame images

① Press ◄ ( ) in step **6** or **7**.
The recorded frame images are played back in turn.
② Press MENU, and select [DELETE LAST] or [DELETE ALL], then press ●.
③ Select [OK] with ▲/▼, then press ●.
When [DELETE LAST] is selected in step ②, each time you repeat steps ① – ③, the recorded frame is deleted from the newest one.

The number of Clip Motion frames that you can record on a disc

Image size	
NORMAL (160×120)	Approx. 560*
MOBILE (80×72)	Approx. 1430**

* When recording 10 frames per Clip Motion file

** When recording 2 frames per Clip Motion file

Notes

- Reading and writing data takes more time than normal image recording.
- Due to the limitations of the GIF format, the number of colors for Clip Motion images is reduced to 256 colors or less. Therefore, the picture quality may deteriorate for some images.
- The file size is reduced in MOBILE mode, so the picture quality deteriorates.
- GIF files not created on this camera may not be displayed correctly.
- All the frame images are immediately recorded on the disc if the mode dial is switched or the power is turned off.

Setting the distance to the subject

Mode dial: /S/A/M/SCN/

Normally the focus is automatically adjusted. This function is useful when the auto focus does not work well such as in dark places.

1 Set the mode dial to , S, A, M, SCN, or .

2 Press FOCUS.
The focus is fixed and the (manual focus) indicator appears.

3 Turn the jog dial to select the desired focus setting.
You can select from 15 focus settings (unit: m) including the position:
0.1, 0.2, 0.3, 0.5, 0.8, 1.0, 1.5, 2, 3, 5, 7, 10, 15, and ∞ (infinity)

To reactivate auto focusing

Press FOCUS again and the focal point information disappears.

Notes

- Focal point information may not completely show the correct distance. Use the information as a guide.
- The focus preset does not work properly when attaching a conversion lens.
- If you shoot a subject within 0.5 m (19 3/4 inches) with the zoom is set to the T side, you may not get a clear focus. In such cases, the focal point information flashes. Press the zoom W button until the indicator stops flashing.

Recording images in macro

Mode dial: /S/A/M/SCN/

The macro recording is used when zooming up a little subject, such as flowers, insects.

1 Set the mode dial to , S, A, M, SCN, or .

2 Press the control button ► ( ) with the menu cleared.
The (macro) indicator appears on the LCD screen.
With the zoom set to the W side, you can shoot a subject that is about 3 cm (1 3/16 inch) (MVC-CD200) or 4 cm (1 5/8 inch) (MVC-CD300) away from the lens surface in macro mode.

To return to normal recording mode

Press the control button ► ( ) again.
The indicator disappears.

Note

You cannot record images in macro with the LANDSCAPE mode of the SCENE SELECTION function.

Adjusting the exposure (EXPOSURE)

Mode dial: /S/A/SCN/

Adjusts the exposure value which is set in the automatic adjustment.

1 Set the mode dial to , S, A, SCN, or .

2 Press .

3 Select the desired exposure value with the jog dial.
Adjust the exposure value while checking the brightness of the background. You can select values ranging from +2.0 EV to -2.0 EV in steps of 1/3 EV.

Note

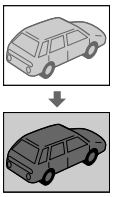
If a subject is under extremely bright or dark situations, or the flash is used, the exposure adjustment may not be effective.

Tip

Normally, the camera automatically adjusts the exposure. If the color of the image is too dark or bright as illustrated below, we recommend that you adjust the exposure manually. When recording a backlighted subject or a subject in the snow, set it toward +, and when recording a dark subject with fully displayed on the LCD screen, set it toward –.

Set the exposure toward +

Set the exposure toward –



Adjusting the white balance (WHITE BALANCE)

Mode dial: /S/A/M/SCN/

Normally, the white balance is automatically adjusted (AUTO). When you record with the shooting condition fixed or under the specific lighting condition, you can manually adjust the white balance.

1 Set the mode dial to , S, A, M, SCN, or .

2 Press MENU.
The menu appears.

3 Select [WB] (WHITE BAL) with ◄/►, the desired setting with ▲/▼.

ONE PUSH ( )
Adjusting the white balance depending on the light source

AUTO (No indicator)
Adjusts the white balance automatically

IN DOOR ( )
- Places where the lighting condition changes quickly
- Under bright lighting such as photography studios
- Under sodium or mercury lamps

OUT DOOR ( )
Recording a sunrise/sunset, night scene, neon signs, or fireworks

To shoot in one-push white balance mode

① Select [ONE PUSH]. The indicator appears.
② Shoot a white object such as paper full under the same situation you will shoot.
③ Press ▲.
The indicator flashes quickly. When the white balance has been adjusted and stored in the memory, the indicator stops flashing.

To reactivate auto adjustment

Select [AUTO] with ▲/▼ in step **3**.

Notes

- Select [AUTO] when shooting with fluorescent lighting.
- The indicator means:
  Slow flashing: white balance is not set or was not able to be set.
  Quick flashing: white balance is being adjusted (after you press ▲).
  Lit steady: white balance has been set.
- If the indicator keeps flashing even when you press ▲ record in automatic white balance mode.

Tip

The image is susceptible to lighting conditions. The image looks blue under sunlight in the summer, and looks red under mercury lamps. Human eyes can resolve these problems. However, the camera cannot resolve the problem by making adjustments. Normally, the camera adjusts it automatically, but, if the image appears in strange colors, we recommend that you change the white balance mode.

Enjoying picture effects (P. EFFECT)

Mode dial: /S/A/M/SCN/

You can digitally process images to obtain special effect.

1 Set the mode dial to , S, A, M, SCN, or .

2 Press MENU.
The menu appears.

3 Select [PFX] (P. EFFECT) with ◄/►, the desired mode with ▲/▼.

SOLARIZE
The light contrast is clearer and the picture looks like an illustration.

B&W
The picture is monochrome (black and white).

SEPIA
The picture is sepia-toned like an old photograph.

NEG.ART
The color and brightness of the picture are reversed as in a negative.

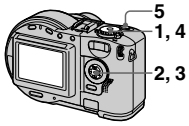
OFF
Does not use the picture effect function.

To cancel PICTURE EFFECT

Select [OFF] with ▲/▼ in step **3**.

Recording the date and time on the still image (DATE/TIME)

Mode dial: /S/A/M/SCN



1 Set the mode dial to SET UP.
The setup screen appears.

2 Select [ ] (CAMERA) with ▲/▼, [DATE/TIME] with ►/▲/▼, then press ►.

3 Select the date and time setting with ▲/▼, then press ●.

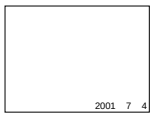
DAY & TIME
Imposes the date, hour, and minute.

DATE
Imposes the year, month, and day.

OFF
Does not impose the date and time.

4 Set the mode dial to , S, A, M, or SCN.

5 Record the image.
The date and time do not appear on the LCD screen during shooting. These appear during playback only.



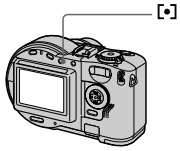
Notes

- If you select [DATE] in step **3**, the date is imposed onto the image in the order selected with "Setting the date and time" (page 14).
- The date and time are not superimposed onto Clip Motion images.

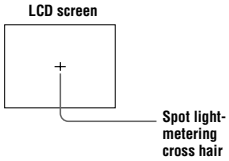
Using the Spot light-metering function

Mode dial: /S/A/M/SCN/

Use this function when there is backlight or when there is strong contrast between the subject and the background, etc.



Press [•] to activate the spot light-metering function. Position the point you want to record at the spot light-metering cross hair.



Playing back three or nine images at once

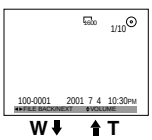
Mode dial:

You can display multiple images on the LCD screen at one time using the zoom buttons.

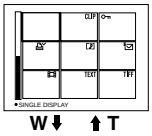
1 Set the mode dial to .

2 Press the zoom W/T buttons repeatedly.
The LCD screen display changes as follows:

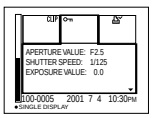
- Single (single-image) screen



- Index (nine-image) screen



- Triple-image screen



The image indicated by the yellow frame in the index screen is displayed in the middle of the triple-image screen with the recording information. To display the other information, press ▲/▼.

The following marks are displayed on each image according to the image type and settings.
: Moving image file
: VOICE mode file
: E-mail file
: Print mark
: Protect mark
TEXT: TEXT file
TIFF: TIFF file
CLIP: Clip Motion file
(No mark): Normal recording (no settings)

To display the next (previous) index screen

Press ▲/▼/◄/►.

To return to normal playback (single-image)

- Press the zoom T button repeatedly.
- Press ●.

Note

When viewing an image recorded in Clip Motion or TEXT mode on the index screen, the image may appear different from the actual image.

Tip

When the triple-image screen is displayed, pressing MENU opens the menu including [PRINT], [PROTECT], and [DELETE]. For details on items, see pages 77, 78, and 81. To close the menu, press MENU again. The menu disappears and the recording information is indicated.

Enlarging a part of the still image (Zoom and trimming)

Mode dial:

1 Set the mode dial to .

2 Display the image to be enlarged.

3 Zoom in the image with the zoom T button.

4 Press ▲/▼/◄/► repeatedly to select the desired portion of the image.
▲: The image moves downward
▼: The image moves upward
◄: The image moves rightward
►: The image moves leftward

To return to the normal size

Press ●.

To record an enlarged image (trimming)

① Press MENU after zooming.
② Select [TRIMMING] with ►, then press ●.
③ Select the image size with ▲/▼, then press ●.
The image is recorded and the image on the LCD screen returns to the normal size after recording.

Notes

- Zoom scaling is up to 5× regardless of the original image size.
- The quality of enlarged images may be deteriorated.
- The original data is left even if you enlarge the image.
- The enlarged image is recorded as the newest file.
- If you trim an image, the disc space will be decrease.
- If the disc space is not sufficient, you may be unable to trim an image.
- Moving images cannot be enlarged.
- The still images recorded in TEXT mode can be enlarged, but these images cannot be trimmed.

Playing back the still images in order (SLIDE)

Mode dial: ▶

This function is useful for checking the recorded images or for presentations, etc.

1 Set the mode dial to ▶.

2 Press MENU.
The menu appears.

3 Select [SLIDE], then press ●.
Set the following items.

INTERVAL
You can select from 1 min (one minute), 30 sec (30 seconds), 10 sec (10 seconds), or 5 sec (5 seconds).

REPEAT
ON: Plays back images in a continuous loop (The slide show stops in approximately 20 minutes*).
OFF: After all images have been played back, the slide show ends.

* The slide show does not end until all the images are played back, even if it takes more than 20 minutes.

4 Select [START], then press ●.
The slide show begins.

To cancel the SLIDE SHOW setting

Select [CANCEL] with ▲/▼ in step **3**, then press ●.

To stop the SLIDE SHOW playback

Press ●, select [EXIT] with ▶, then press ●.

To skip to the next/previous image during the SLIDE SHOW

Select ◀/▶ at the lower-left on the LCD screen.

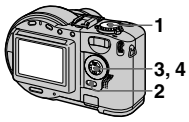
Note

The interval setting time may vary depending on the image size.

Rotating a still image (ROTATE)

Mode dial: ▶

You can rotate the image recorded in portrait orientation and display it in landscape orientation.



1 Set the mode dial to ▶, and display the image to rotate.

2 Press MENU.
The menu appears.

3 Select [ROTATE] with ◀/▶, then press ●.

4 Rotate the image clockwise ↘ or counterclockwise ↙, then select [OK] with ▲/▼, then press ●.

To cancel rotation

Select [CANCEL] with ▲/▼ in step **4**, then press ●.

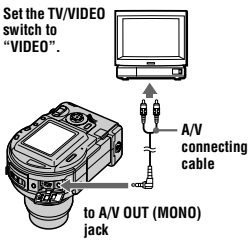
Notes

- You cannot rotate protected or uncompressed images, or images recorded in TEXT mode.
- You may not be able to rotate images recorded with other equipment.
- Also, when viewing images on a computer, the image rotation information may not be reflected depending on the application software.
- If you rotate an image, the disc space will decrease.
- If the disc space is not sufficient, you may not be able to rotate an image.

Viewing images on a TV screen

Mode dial: ▶

Before connecting your camera, be sure to turn off the TV.



1 Connect the A/V connecting cable to the A/V OUT (MONO) jack of your camera and to the audio/video input jacks of the TV.
If your TV has stereo type input jacks, connect the audio plug (black) of the A/V connecting cable to the Lch jack.

2 Turn on the TV and start playback on your camera.
The playback image appears on the TV screen.

Notes

- You cannot use a TV that has an antenna (aerial) connector only.
- When viewing a still image on the TV, the black band may appear around the image.

Deleting images (DELETE)

Mode dial: ▶

Protected images cannot be deleted.

In single-image or triple-image mode

1 Set the mode dial to ▶.

2 In single-image mode:
Display the image you want to delete with ◀/▶.
In triple-image mode:
Press the zoom W button twice to turn to the triple-image mode. Display the image you want to delete with ◀/▶.

3 Press MENU.
The menu appears.

4 Select [DELETE] with ◀/▶ in single-image mode, or with ▲/▼ in triple-image mode, then press ●.

5 Select [OK] with ▲/▼, then press ●.
The image (or the middle-positioned image in triple-image mode) is deleted.

In index mode

1 Set the mode dial to ▶, then display the index screen with the zoom W button.

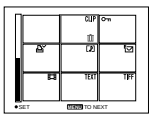
2 Press MENU.
The menu appears.

3 Select [DELETE] with ◀/▶, then press ●.

4 Select [ALL] or [SELECT] with ◀/▶, then press ●.

5 When you select [ALL]
Select [ENTER] with ◀/▶, then press ●.
All the unprotected images are deleted.

When you select [SELECT]
The frame of the selected image turns green.
① Select the image to be deleted with ▲/▼/◀/▶, then press ●.
To cancel, press ● again.
Repeat this step to select other images.
The 🗑 (delete) indicator appears on the selected images.



② Press MENU.
③ Select [OK] with ◀/▶, then press ●.

To cancel deleting

Select [CANCEL] with ◀/▶ in step **4** or [EXIT] with ◀/▶ in step **5**, then press ●.

Notes

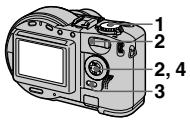
- When using a CD-R, even if you delete images, the disc remaining space does not increase.
- Only when using a CD-RW, the disc remaining space increases after deleting the last-recorded image if the is indicated on the LCD screen before deleting. If you modify an image, or open and close the disc cover, will disappear.
- If the disc space is not sufficient, you may not be able to delete an image.
- If the lower four-digit file number of an image is the same as the number of the selected image, that image also will be deleted.

Preventing accidental erasure (PROTECT)

Mode dial: ▶

Protects images against accidental erasure.

In single-image or triple-image mode



1 Set the mode dial to ▶.

2 In single-image mode
Display the image you want to protect with ◀/▶.
In triple-image mode
Press the zoom W button twice to turn to the triple-image mode. Display the image you want to protect with ◀/▶.

3 Press MENU.
The menu appears.

4 Select [PROTECT] with ◀/▶ in single-image mode, or with ▲/▼ in triple-image mode, then press ●.
The displayed image (or the middle-positioned image in triple-image mode) is protected. The 🔑 (protect) indicator appears on the image.

To release protection

Press ● again in step **4**. The 🔑 indicator disappears.

In index mode

1 Set the mode dial to ▶, then display the index screen with the zoom W button.

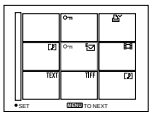
2 Press MENU.
The menu appears.

3 Select [PROTECT] with ◀/▶, then press ●.

4 Select [ALL] or [SELECT] with ◀/▶, then press ●.

5 When you select [ALL]
Select [ON] with ◀/▶, then press ●.
All the images in the disc are protected.

When you select [SELECT]
The frame of the selected image turns green.
① Select the image to be protected with ▲/▼/◀/▶, then press ●.
To cancel, press ● again.
Repeat this step to select other images.
The 🔑 indicator appears on the selected images.



② Press MENU.
③ Select [OK] with ◀/▶, then press ●.

To release protection

If you selected [ALL] in step **4**, select [OFF] with ◀/▶, then press ●. If you selected [SELECT] in step **4**, select the image to be unprotected with ▲/▼/◀/▶, then press ●. Repeat this step to select other images. Press MENU and select [OK] with ◀/▶, then press ●.

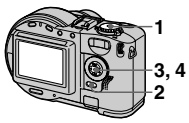
Notes

- If you protect an image, the disc space will decrease. Also, if you release protection, the disc space will decrease.
- If the disc space is not sufficient, you may not be able to protect an image.

Changing the recorded still image size (RESIZE)

Mode dial: ▶

You can change the image size of the recorded image.



1 Set the mode dial to ▶, then display the image of which you want to change the size.

2 Press MENU.
The menu appears.

3 Select [RESIZE] with ◀/▶, then press ●.

4 Select the desired size with ▲/▼, then press ●.
MVC-CD200: 1600×1200, 1024×768, 640×480
MVC-CD300: 2048×1536, 1600×1200, 1280×960, 640×480
The resized image is recorded.

To cancel changing the size

Select [CANCEL] with ▲/▼ in step **4**, then press ●.

Notes

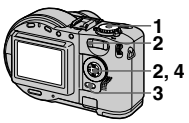
- When you change from a small size to a large size, the picture quality deteriorates.
- The original image is retained even after resizing.
- You cannot change the size of images recorded in TEXT mode, moving images, uncompressed images, or Clip Motion images.
- The resized image is recorded as the newest file.
- If you resize an image, the disc space will decrease.
- If the disc space is not sufficient, you may not be able to resize an image.

Selecting still images to print (PRINT)

Mode dial: ▶

You can mark a print mark on still images recorded with your camera. This mark is convenient when you have images printed at a shop that conforms with the DPOF (Digital Print Order Format) standard.

In single-image or triple-image mode



1 Set the mode dial to ▶.

2 In single-image mode
Display the image you want to print with ◀/▶.
In triple-image mode
Press the zoom W button twice to turn to the triple-image mode. Display the image you want to print with ◀/▶.

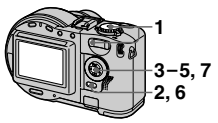
3 Press MENU.
The menu appears.

4 Select [PRINT] with ◀/▶ in single-image mode, or with ▲/▼ in triple-image mode, then press ●.
The 🖶 (print) mark is marked on the displayed image (or the middle-positioned image in triple-image mode).

To unmark the print mark

Press ● again in step **4.** 🖶 mark disappear.

In index mode



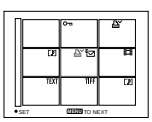
1 Set the mode dial to ▶, then display the index screen with the zoom W button.

2 Press MENU.
The menu appears.

3 Select [PRINT] with ◀/▶, then press ●.

4 Select [SELECT] with ◀/▶, then press ●.
When marking the 🖶 mark, you cannot select [ALL].
The frame of the selected image turns green.

5 Select the image to be marked with ▲/▼/◀/▶, then press ●.
To cancel, press ● again.
Repeat this step to select other images. The 🖶 mark appears on the selected image.



6 Press MENU.
The menu appears.

7 Select [OK] with ◀/▶, then press ●.

To unmark selected print marks

Select the image to be unmarked in step **5** with ▲/▼/◀/▶, then press ●.

To unmark all the print marks

Select [ALL] with ◀/▶ in step **4**, then press ●. Select [OFF] with ◀/▶, then press ●.
The 🖶 marks on all images are unmarked.

To cancel marking the print mark

Select [CANCEL] with ◀/▶ in step **4**, then press ●, or select [EXIT] with ◀/▶ in step **7**, then press ●.

Notes

- You cannot mark moving images, Clip Motion images or images recorded in TEXT mode.
- If you mark an image recorded in TIFF mode with a print mark, only the uncompressed image is printed, and the JPEG image recorded at the same time is not printed.
- If you mark an image with a print mark, the disc space will decrease. Also, if you unmark the print mark, the disc space will decrease.
- If the disc space is not sufficient, you may not be able to mark an image with a print mark.

Formatting a CD-RW

When deleting all the images in the CD-RW or using the CD-RW formatted with other equipment than this camera, format the CD-RW. When you format a CD-RW, all data stored on the disc will be deleted. Check the contents of the disc before formatting. The initialization is also executed after the format.

1 Insert only the CD-RW you want to format.

2 Set the mode dial to SET UP.
The setup screen appears.

3 Select [ ] (DISC TOOL) with ▲/▼, [FORMAT] with ▶/▲/▼, then press ▶.

4 Select [OK] with ▲/▼, then press ●.
"FORMAT PLACE ON LEVEL SURFACE" appears on the LCD screen.

5 Select [OK] with ▲/▼, then press ●.

To cancel formatting

Select [CANCEL] with ▲/▼ in step **3**, then press ●.

Notes

- When you format, be sure to use a fully charged battery pack or the AC power adaptor as the power source.
- CD-Rs cannot be formatted.
- The disc which is formatted using other equipment than this camera cannot be used with this camera. Format the disc again with this camera.
- It takes about seven minutes to execute the format.
- About 300 times formatting can be available on a CD-RW.
- Once you format the CD-RW, protected images are also deleted.

Changing the setup settings (SET UP)

Set the mode dial to SET UP. The setup screen appears. You can set up the following items with the control button.

DISC TOOL

Item	Setting	Description
FINALIZE	OK	Finalizes a disc (page 32).
	CANCEL	Cancels the finalization.
FORMAT	OK	Formats a CD-RW (page 82).
	CANCEL	Cancels formatting of the CD-RW.
INITIALIZE	OK	Initializes a disc (page 18).
	CANCEL	Cancels the initialization.
UNFINALIZE	OK	Unfinalizes a CD-RW (page 34).
	CANCEL	Cancels the unfinalization.

CAMERA

Item	Setting	Description
SCENE SELECTION	■TWILIGHT LANDSCAPE PORTRAIT	Selects the SCENE SELECTION mode that is assigned to the SCN position (page 58).
MOVING IMAGE	■MPEG MOVIE	Records the MPEG movie (page 26).
	CLIP MOTION	Records the Clip Motion.
DATE/TIME	DAY & TIME DATE ■OFF	Sets whether to insert the date and time into the still image (page 70).
DIGITAL ZOOM	■ON	Uses digital zoom (page 23).
	OFF	Does not use digital zoom.
BRACKET STEP (MVC-CD300 only)	±1.0EV ■±0.7EV ±0.3EV	Sets the exposure plus minus value when recording three images with each exposure value shifted (page 63).
RED EYE REDUCTION	ON ■OFF	Reduces the red-eye phenomenon (page 24).
AF ILLUMINATOR	■ON OFF	Uses when it is hard to focus on the subject under dark situations (page 25).

SETUP 1

Item	Setting	Description
FILE NUMBER	SERIES	Assigns numbers to files in sequence even if the disc is changed.
	■RESET	Resets the file number that starts from 0001 each time the disc is changed.
CONVERSION LENS (MVC-CD300 only)	ON	Set to [ON] when using the VCL-MHG07 conversion lens (not supplied). At this time, the zoom function does not work. Also, note that the VAD-S70 adaptor ring needed to mount the conversion lens to your camera is not sold in some countries and regions.
	■OFF	
言語 / LANGUAGE	■ENGLISH	Displays the menu items in English.
	日本語 /JPN	Displays the menu items in Japanese.
CLOCK SET	OK	Sets the date and time (page 14).
	CANCEL	

When [CONVERSION LENS] is set to [ON]:

- The SCENE SELECTION and zoom functions are not activated.
- When the mode dial is set to S or M, the iris value can be selected only from F4 or more.
- The focus preset is not activated.
- The macro recording is not activated.

SETUP 2

Item	Setting	Description
LCD BRIGHTNESS	BRIGHT ■NORMAL DARK	Selects the LCD brightness (page 22).
LCD BACKLIGHT	BRIGHT ■NORMAL	Selects the brightness of the LCD backlight.
BEEP	SHUTTER	Turns on the shutter sound only. (The shutter sound is heard when you press the shutter button.)
	■ON	Turns on the beep/shutter sound (when you press the control button/shutter button).
	OFF	Turns off the beep/shutter sound.
VIDEO OUT	NTSC	Sets the video output signal to NTSC mode (e.g., Japan, the USA).
	PAL	Sets the video output signal to PAL mode (e.g., Europe).

Item	Setting	Description
USB CONNECT	PTP ■NORMAL	Switches the USB mode (page 35).
DEMO	■ON OFF	This is activated only when using the AC power adaptor. [DEMO] is set to [STBY] at the factory and the demonstration starts about 10 minutes after you have set the mode dial to , S, A, M, or SCN. To cancel the demonstration, turn off the power.

Precautions

The set is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the set itself has been turned off.

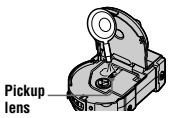
On handling the camera

Do not carry the camera by holding the disc cover

Do not touch the rotating disc
This may cause serious injuries.

On pickup lens cleaning

When the pickup lens is dirty and the camera cannot read any image, clean the pickup lens using a commercially available blower.



On cleaning

Cleaning the LCD screen
Wipe the screen surface with a cleaning cloth (not supplied) or an LCD cleaning kit (not supplied) to remove fingerprints, dust, etc.

Cleaning the camera surface
Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface dry. Do not use any type of solvent such as thinner, alcohol or benzene as this may damage the finish or the casing.

After using your camera at the seashore or other dusty locations
Clean your camera carefully. Otherwise, the salty air may corrode the metal fittings or dust may enter the inside of your camera, causing a malfunction.

On operating temperature

Your camera is designed for use between the temperatures of 0°C to 40°C (32°F to 104°F). Recording in extremely cold or hot places that exceed this range is not recommended.

On moisture condensation

If the camera is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside or outside the camera. Should this occur, the camera will not operate properly.

Moisture condensation occurs easily when:
- The camera is brought from a cold location such as a ski slope into a warmly heated room.
- The camera is taken from an air-conditioned room or car interior to the hot outdoors, etc.

How to prevent moisture condensation
When bringing the camera from a cold place to a warm place, seal the camera in a plastic bag and allow it to adapt to conditions at the new location over a period of time (about an hour).

If moisture condensation occurs
Turn off the camera and wait about an hour for the moisture to evaporate. Note that if you attempt to record with moisture remaining inside the lens, you will be unable to record clear images.

On pickup lens

Do not touch the pickup lens inside the disc cover. And do not open the disc cover except when inserting or removing a disc to keep dust out.

On AC power adaptor

- Unplug the unit from the wall outlet (mains) when you are not using the unit for a long time. To disconnect the power cord (mains lead), pull it out by the plug. Never pull the power cord (mains lead) itself.
- Do not operate the unit with a damaged cord (mains lead) or if the unit has been dropped or damaged.
- Do not bend the power cord (mains lead) forcibly, or place a heavy object on it. This will damage the cord (mains lead) and may cause fire or electrical shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.
- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM receivers and video equipment disturb AM reception and video operation.
- The unit becomes warm during use. This is not a malfunction.
- Do not place the unit in locations that are:
  — Extremely hot or cold
  — Dusty or dirty
  — Very humid
  — Vibrating

On battery pack

- Use only the specified charger with the charging function.
- To prevent accident from a short circuit, do not allow metal objects to come into contact with the battery terminals.
- Keep the battery pack away from fire.
- Never expose the battery pack to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.
- Keep the battery pack dry.
- Do not expose the battery pack to any mechanical shock.
- Do not disassemble nor modify the battery pack.
- Attach the battery pack to the camera securely.
- Charging while some capacity remains does not affect the original battery capacity.

On the built-in rechargeable lithium battery

Your camera is supplied with a built-in rechargeable lithium battery installed so as to retain the date and time, etc., regardless of the setting of the POWER switch. The built-in rechargeable lithium battery is always charged as long as you are using your camera. The battery, however, will get discharged gradually if you do not use your camera. It will be completely discharged in about one month if you do not use your camera at all. Even if the built-in rechargeable lithium battery is not charged, it will not affect the camera operation. To retain the date and time, etc., charge the battery if the battery is discharged.

Charging the built-in rechargeable lithium battery:
- Connect your camera to house current (mains) using the AC power adaptor supplied with your camera, and leave your camera with the power turned off for more than 24 hours.
- Or install the fully charged battery pack in your camera, and leave your camera with the power turned off for more than 24 hours.

If any problem occurs, unplug your camera and contact your nearest Sony dealer.

On discs

Be sure to use only 8 cm CD-Rs/CD-RWs. You cannot read or write data on other type discs that do not correspond to this camera.

On cleaning

- Do not clean a disc using a cleaner before recording. Use a commercially available blower to remove dust.
- If fingerprints, dust, drop of water, or oil makes the recordable side (the other side of the printed side) of a disc dirty, the camera may not properly record an image on the disc. You should handle a disc with a lot of care.
- If a disc does become dirty, wipe it in a straight line from center to edge with a soft dry cloth or a soft cloth lightly moistened with a mild detergent solution. You can use a commercially available CD cleaner.

- Do not use any solvent (benzine, thinner, static protection product, record cleaner, etc.) to clean a disc.

Notes
- Do not remove the disc while reading or writing data.

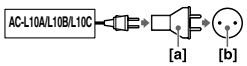
- Data may be damaged if:
  — You remove the disc or turn off the power while reading or writing data.
  — You use the camera in a location subject to the effects of static electricity or noise.
- Do not attach any material on the surface of a disc. This causes a nonuniform rotating speed and this may cause a malfunction of the camera.
- You can write only on the label surface of a disc. When you write, use only a felt-tip marker and do not touch it until it is in dry state, and do not heat it. Do not use a sharp-pointed tool, such as a ballpoint pen.
- Hold a disc at the edges while pressing the center hole lightly. Do not touch the recordable side (the other side of the printed side) of a disc.

- When you carry or store a disc, put it in its case.
- Do not strike, bend or drop a disc, or rub the edge of a disc.
- Do not store a disc in the following locations:
  —In dusty or dirty places
  —Under direct sunlight
  —Near heaters
  —In dump places
- If you play back the disc on which any image has not been recorded using a CD-ROM drive, the CD-ROM drive may malfunction or the disc may be scratched.

Using your camera abroad

Power sources

You can use your camera in any country or area with the supplied battery charger within 100 V to 240 V AC, 50/60 Hz. Use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet (mains) **[b]**.



Watching the playback picture on TV

If you want to view the playback picture on a TV, you need a TV having a video input jack and a video connecting cable.
The color system of the TV must be the same as that of your digital still camera. Check the following list:

NTSC system
Bahama Islands, Bolivia, Canada, Central America, Chile, Columbia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system
Australia, Austria, Belgium, China, Denmark, Finland, Germany, Great Britain, Holland, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system
Brazil

PAL-N system
Argentina, Paraguay, Uruguay

SECAM system
Bulgaria, Czech Republic, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Slovak Republic, Ukraine, etc.

About "InfoLITHIUM" battery pack

What is the "InfoLITHIUM" battery pack?

The "InfoLITHIUM" battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between your camera and the AC power adaptor.
The "InfoLITHIUM" battery pack calculates the power consumption according to the operating conditions of your camera, and displays the remaining battery time in minutes.

Charging the battery pack

- Be sure to charge the battery pack before you start using your camera.
- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F) until the ϟ /CHG lamp goes out, indicating that the battery pack is fully charged. If you charge the battery pack outside of this temperature range, you may not be able to efficiently charge the battery pack.
- After charging is completed, either disconnect the AC power adaptor from the DC IN jack on your camera or remove the battery pack.

Effective use of the battery pack

- Battery performance decreases in low-temperature surroundings. So, the time that the battery pack can be used is shorter in cold places. We recommend the following to use the battery pack longer:
  — Put the battery pack in a pocket close to your body to warm it up, and insert it in your camera immediately before you start taking shots.
- Frequently operating the zoom wears out the battery pack faster.
- Be certain to turn the POWER switch to off when not taking shots or playing back on your camera.
- We recommend having spare batteries handy for two or three times the expected shooting time, and make a trial shots before taking the actual shots.
- Do not expose the battery pack to water. The battery pack is not water-resistant.

Remaining battery time indicator

- If the power goes off although the battery remaining indicator indicates that the battery pack has enough power to operate, charge the battery pack fully again so that the indication on the battery remaining indicator is correct. Note, however, that the correct battery indication sometimes will not be restored if it is used in high temperatures for a long time or left in a fully charged state, or the battery pack is frequently used. Regard the remaining battery time indication as the approximate shooting time.

- The ⌧ mark indicating there is little remaining battery time sometimes flashes depending on the operating conditions or ambient temperature and environment even if the remaining battery time is 5 to 10 minutes.

How to store the battery pack

- Even if the battery pack is not used for a long time, store it in a dry, cool place after fully charging it once per year and then using the battery pack up on your camera. This is to maintain the battery pack's functions.
- To use the battery pack up on your camera, leave the POWER switch to on in ▶ mode until the power goes off without a disc inserted.

Battery life

- The battery life is limited. Battery capacity decreases little by little as you use it more and more, and as time passes. When the battery operating time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Please buy a new battery pack.
- The battery life varies according to how it is stored and operating conditions and environment for each battery pack.

Troubleshooting

If you experience trouble with your camera, first check the following items. Should your camera still not operate properly after you have made these checks, press the reset button located on the bottom. (If you press the reset button, the date and time setting is cleared.) Should your camera still not operate properly, consult your Sony dealer or local authorized Sony service facility. **If code displays (C:□□:□□) appear on the LCD screen, the self-diagnosis display function is working (page 102).**

Symptom	Cause and/or Solution
Your camera does not work.	• You are not using an "InfoLITHIUM" battery pack. →Use an "InfoLITHIUM" battery pack (page 9). • The disc is not inserted properly. →Eject the disc, and insert it again (page 16). • The battery level is too low. (The ⌧ indicator appears.) →Charge the battery pack fully (page 10). • The AC power adaptor is not connected securely. →Connect it securely to the DC IN jack and a wall outlet (mains) (page 10, 13). • The malfunction occurs inside the camera. →Turn off the power, and turn on after one minute, then check that the camera works properly.
Your camera cannot record images.	• The mode dial is set to ▶ or SET UP. →Set it to 📷, S, A, M, SCN, or 🎞 (pages 20, 26). • No disc is inserted into your camera. →Insert a disc (page 16). • The disc has not been initialized. →Initialize the disc (page 18).

Symptom	Cause and/or Solution
The picture is out of focus.	• Your camera is not in macro recording mode when you shoot a subject that is about 3 to 50 cm (1 3/16 to 19 3/4 inches) (MVC-CD200) or about 4 to 50 cm (1 5/8 to 19 3/4 inches) (MVC-CD300) away from the lens. →Set the macro recording mode (page 66). →Press the zoom W button repeatedly. • The LANDSCAPE mode of the SCENE SELECTION function is selected. →Cancel the function. • The focus preset is selected. →Cancel the function. • [CONVERSION LENS] is set to [ON] in the setup settings (MVC-CD300 only). →Set it to [OFF] (page 85).
The resizing function does not work.	• You cannot resize moving images, text images, Clip Motion images, and uncompressed images.
You cannot display a print mark.	• You cannot display print marks on moving images, text images and Clip Motion images.
The picture is noisy.	• Your camera is placed near a TV or other equipment that uses strong magnets. →Move your camera away from the TV, etc.
The picture is too dark.	• You are shooting a subject with a light source behind the subject. →Adjust the exposure (page 67). • The brightness of the LCD screen is too low. →Adjust the brightness of the LCD screen (page 22).

Symptom	Cause and/or Solution
The flash does not work.	• The flash is set to ⊘. →Set the flash to (no indication) or ϟ (page 24). • The mode dial is set to ▶, SET UP, or 🎞 (MPEG MOVIE). →Set it to 📷, S, A, M, SCN, or 🎞 (CLIP MOTION). • The camera is in one of the following SCENE SELECTION modes: TWILIGHT or LANDSCAPE. →Cancel the SCENE SELECTION function or set the flash to ϟ (page 24, 58). • [MODE] (REC MODE) is set to [EXP BRKTG] or [BURST] (MVC-CD300 only) in the menu settings. →Set it to the other modes.
The date and time are recorded incorrectly.	• The date and time are not set correctly. →Set the correct date and time (page 14).
Vertical streaks appear when you are shooting a very bright subject.	• This is called the smear phenomenon. This is not a malfunction. →Set the exposure toward – (page 67).
The zoom does not work. (MVC-CD300 only)	• [CONVERSION LENS] is set to [ON] in the setup settings. →Set it to [OFF] (page 85). • The zoom cannot be used when recording a moving image with [MOVING IMAGE] set to [MPEG MOVIE].
Digital zoom does not function.	• The digital zoom cannot be used when recording a moving image with [MOVING IMAGE] set to [MPEG MOVIE]. • [DIGITAL ZOOM] is set to [OFF]. →Set [DIGITAL ZOOM] to [ON] in the menu settings (page 23).
The image is in monochrome.	• You shot the image in TEXT mode. →Cancel the TEXT mode (page 61). • [PFX] (P. EFFECT) is set to [B&W] in the menu settings. →Cancel the B&W mode (page 69).

Symptom	Cause and/or Solution
The image cannot be played back on the CD-ROM drive of your computer.	• The disc has not been finalized. →Finalize the disc (page 32). • An error occurs during recording by vibration. →Possibly, you may be able to play back images if you connect the camera to your computer with the USB cable. • The CD-ROM drive does not correspond to the packet-write system or does not conform to the MultiRead type. →Consult the computer or the CD-ROM drive manufacturer. • Causes not described above are occurred. →Consult the computer or software manufacturer.
Your camera cannot delete an image.	• The disc is not initialized. →Initialize the disc (page 18). • The disc space is not sufficient. →This is not a malfunction. • The image is protected. →Cancel the protection (page 78).
The power turns off suddenly.	• If you do not operate the camera for about three minutes while the power is on, the camera turns off automatically to prevent wearing down the battery pack. →Turn on the camera. • The battery pack is discharged. →Replace it with a fully charged battery pack.
The image does not appear on the TV screen.	• The [VIDEO OUT] setting of your camera is incorrect. →Change the setting (page 85).
The SLIDE SHOW function stops automatically.	• The SLIDE SHOW function stops after about 20 minutes. →To continue the slide show, select [START] again (page 74).
The macro function does not work.	• [SCENE SELECTION] is set to [LANDSCAPE] in the setup settings. →Cancel the SCENE SELECTION function (page 58). • [CONVERSION LENS] is set to [ON] in the setup settings (MVC-CD300 only). →Set it to [OFF] (page 85).

Symptom	Cause and/or Solution
The TEXT mode recording cannot be properly done.	• The subject is not under even lighting situations. →Change lighting. • The mode dial is set to S, A, M, or SCN. →Set it to 📷.
Your computer does not recognize your camera.	• The battery level is low. →Use the AC power adaptor (page 13). • The camera is turned off. →Turn on the camera. • The USB cable is not connected firmly. →Disconnect the USB cable, and connect it again firmly. Make sure that "USB MODE" is displayed on the LCD screen (page 38). • The USB connectors on your computer are connected to other equipment besides the keyboard, the mouse, and your camera. →Disconnect the USB cables except for the ones connected to the keyboard, the mouse, and your camera. • The USB driver is not installed. →Install the USB driver (page 38). • [USB CONNECT] is set to [PTP] in the setup settings. →Set it to [NORMAL] (page 86). • Since the camera is connected to a computer with the USB cable before installing the USB driver, the drive is not recognized by the computer. →Delete the drive which is not recognized, then install the USB driver. For details, see the procedure below.

Reinstall the USB driver when using Windows 98, Windows 98SE, Windows Me and Windows 2000 Professional

Perform all steps without skipping.

1 Turn on your computer and allow Windows to load.

2 Connect the USB jack on the camera and the computer with the supplied USB cable.

3 Insert a disc.

4 Connect the AC power adaptor to your camera and then to a wall outlet (mains), and turn on the power of your camera.

5 Open "Device Manager" on Windows.

For Windows 98, Windows 98SE and Windows Me users:

① Open [Control Panel] from [My Computer], then double-click [System].

② "System properties" is displayed. Click the [Device Manager] tab located at the top.

③ Click [CD Mavica] in [Other devices], then click the [Delete (E)] button located at the lower-right corner.

For Windows 2000 Professional users:

* Log in with the permission of administrator.

① Open [Control Panel] from [My Computer], then double-click [System].

② "System properties" is displayed. Click the [Hardware] tab located at the top, then click the [Device Manager (D)] button.

③ Click [View] in [Device Manager], then click [Devices by type (E)].

④ Right-click [CD Mavica] in [Other devices], then click [Delete (E)].

6 After the message appears to verify that you delete the device manager, click "OK."

7 Turn off the camera, disconnect the USB cable, and restart the computer.

8 Install the USB driver in the supplied CD-ROM to the computer following the procedure on page 38.

Battery packs

Symptom	Cause and/or Solution
The battery pack cannot be charged.	• The power of the camera is turned on. →Turn off the power of the camera (page 10).
The battery life is short.	• You are recording/playing back images under extremely cold temperatures. • The battery pack is not charged enough. →Charge the battery pack fully. • The battery pack is dead. →Replace the battery pack with a new one.

Symptom	Cause and/or Solution
The indication of the battery remaining time is not proper, or the power is immediately turned off even if the battery remaining indicator indicates that the battery level is sufficient.	• You are using the camera for many hours under extremely hot or cold temperatures. • The battery pack is dead. →Replace the battery pack with a new one (page 9). • The battery level is too low. →Install the fully charged battery pack (page 9, 10). • A deviation has occurred in the remaining battery time. →Charge the battery pack fully (page 10).
The ϟ/CHG lamp flashes when charging a battery pack.	• A malfunction has occurred in the battery pack. →Contact your Sony dealer or local authorized Sony service facility.
The ϟ/CHG lamp does not light up when charging a battery pack.	• The AC power adaptor is not connected. →Connect the power cord firmly to a wall outlet (mains) (page 10). • The battery pack is not installed properly. →Install it properly (page 9). • Charging of the battery pack is complete.
No function works though the power is on.	• — →Remove the battery pack, then install it again after about one minute. If the function still do not work, press the reset button located on the bottom using a sharp-pointed object. (If you press the reset button, the date and time setting is cleared.)

Warning and notice messages

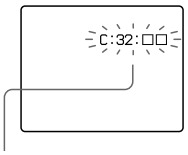
Various messages appear on the LCD screen. Check the corresponding descriptions in the following list.

Message	Meaning
LENS CAP ATTACHED	The lens cap is attached.
COVER OPEN	The disc cover is opened.
NO DISC	No disc is inserted.
DRIVE ERROR	There is trouble with the disc drive or the camera.
DISC ERROR	An unusable disc is inserted or there is trouble with the disc.
DEW ERROR	A moisture condensation has occurred inside the camera.
DISC PROTECT	The disc was protected with a computer.
DIRECTORY ERROR	The same directory exists.
NOT ENOUGH DISC SPACE	The remaining capacity of the disc is not enough to operate other than executing the finalization.
NOT INITIALIZED	Since the disc has not been initialized, the camera cannot record any image on the disc.
ALREADY INITIALIZED	It is not necessary to execute the initialization, the disc was initialized.
ALREADY FINALIZED	It is not necessary to execute the finalization, the disc was finalized.
NO FILE	No image is recorded on the disc.
FILE ERROR	Trouble has occurred during playback.
IMAGE SIZE OVER	You tried to play back images with an image size larger than the maximum playback size of this camera.
INVALID OPERATION	You try to play back the image recorded with other equipment.
FILE PROTECT	The image is protected.
For "InfoLITHIUM" BATTERY ONLY	The battery is not the "InfoLITHIUM" type.
NOT ENOUGH BATTERY	The battery level is too low to execute the initialization or finalization.

Message	Meaning
	The battery level is too low.
CAN NOT UNFINALIZE	A CD-R or the disc that is not finalized is inserted.
CAN NOT FORMAT	A CD-R is inserted.
FORMAT ERROR	The disc that is formatted using other equipment than this camera is inserted.
TURN THE POWER OFF AND ON AGAIN	A malfunction occurs on the lens (MVC-CD300 only).
	The amount of light is not sufficient or the shutter speed is too slow.

Self-diagnosis display

Your camera has a self-diagnosis display. This function displays the camera condition on the LCD screen with a combination of a letter and four digits of numbers. If this appears, check the following code chart. The code informs you of the camera's current condition. The last two digits (indicated by □□) will differ depending on the state of the camera.



Self-diagnosis display

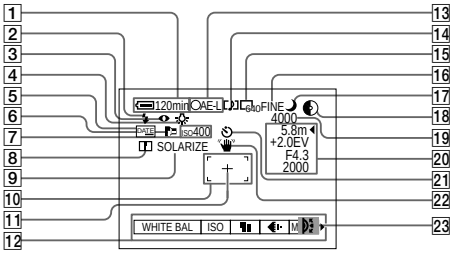
- C: □□: □□
  You can repair the camera yourself.
- E: □□: □□
  Contact your Sony dealer or local authorized Sony service facility.

Code	Cause and/or Corrective Action
C:32:□□	• There is trouble with the disc drive. →Turn the power off and on again.
C:13:□□	• A disc not compatible with this camera is inserted or the data is broken. →Change the disc. (page 16)
E:61:□□ E:91:□□	• A camera malfunction that you cannot repair has occurred. →Contact your Sony dealer or local authorized Sony service facility and inform them of the 5-digit indication. (example: E:61:10)

If you are unable to rectify the problem even if you try corrective actions a few times when C:□□:□□ is indicated, contact your Sony dealer or local authorized Sony service facility.

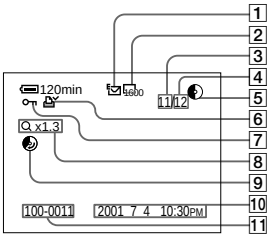
LCD screen indicators

The indicators during recording



1. **Battery remaining indicator**
2. **Flash level indicator/Flash mode indicator**
3. **Red-eye reduction indicator**
4. **White balance indicator**
5. **DATE indicator**
6. **AF illuminator indicator**
7. **ISO number indicator**
8. **Sharpness indicator**
9. **Picture effect indicator**
10. **AF frame**
11. **Spot light-metering cross hair**
12. **Menu**
    Pressing MENU switches the menu on/off.
13. **AE/AF lock indicator**
14. **Recording mode/Clip Motion indicator**
15. **Image size indicator**
16. **Image quality indicator**
17. **SCENE SELECTION indicator**
18. **Remaining disc capacity indicator**
19. **Remaining number of recordable images/Recording time indicator/Self-diagnosis function indicator**
20. **Manual adjustment indicators**
21. **Self-timer indicator**
22. **Light amount warning indicator**
23. **Jog dial indicator**

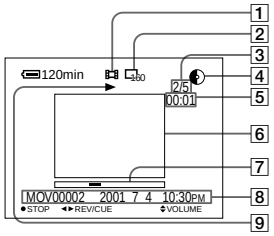
The indicators during still image playback



1. **Recording mode/Clip Motion indicator**
2. **Image size indicator**
3. **Image number**
4. **Number of stored images on a disc**
5. **Remaining disc capacity indicator**
6. **Print mark indicator**
7. **Protect indicator**
8. **Zoom scaling indicator**
9. **Disc space recoverable indicator**
10. **Recording date of the playback image***
11. **File name***

* When the menu is displayed, this indicator disappears from the screen.

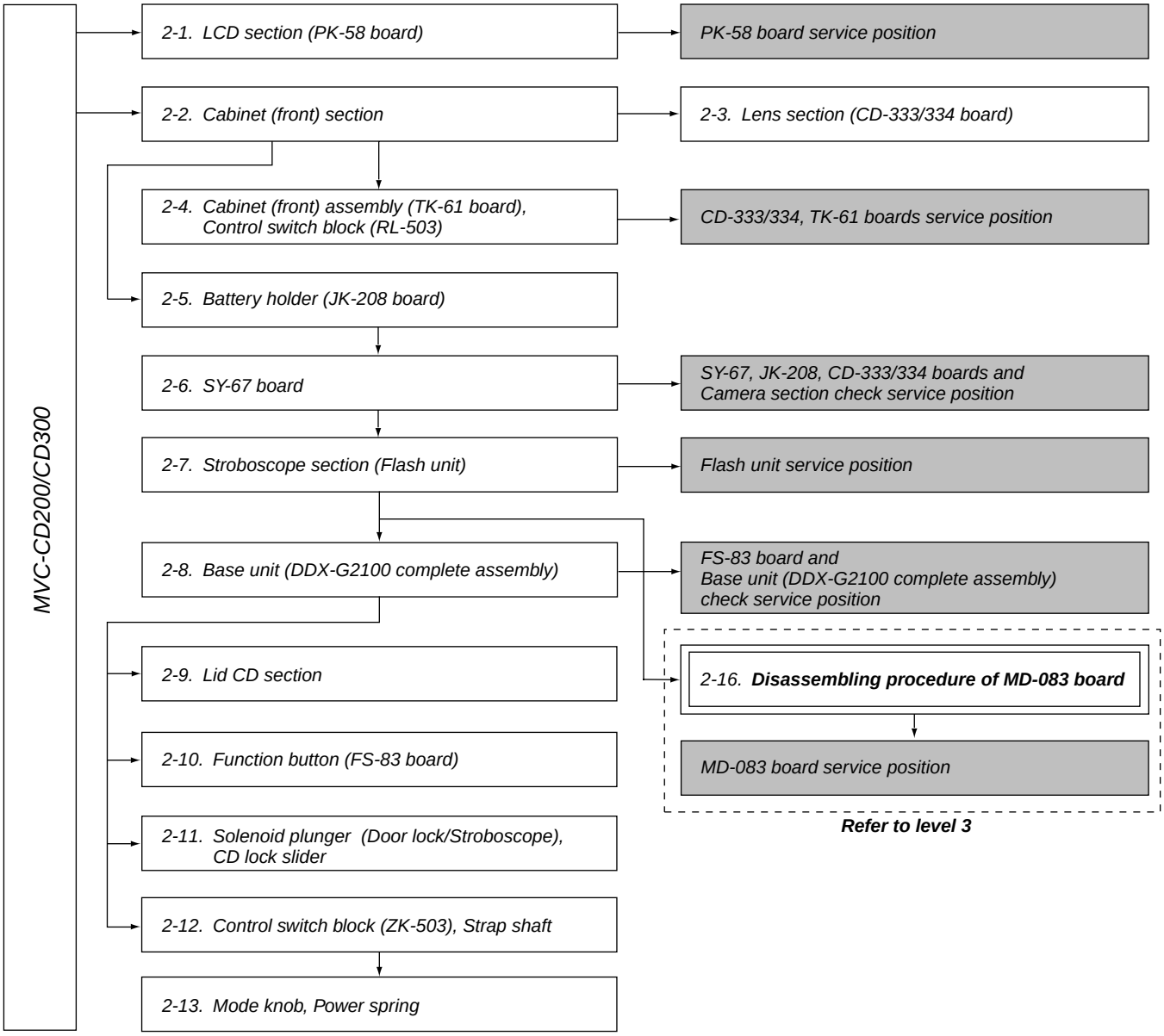
The indicators during moving image playback



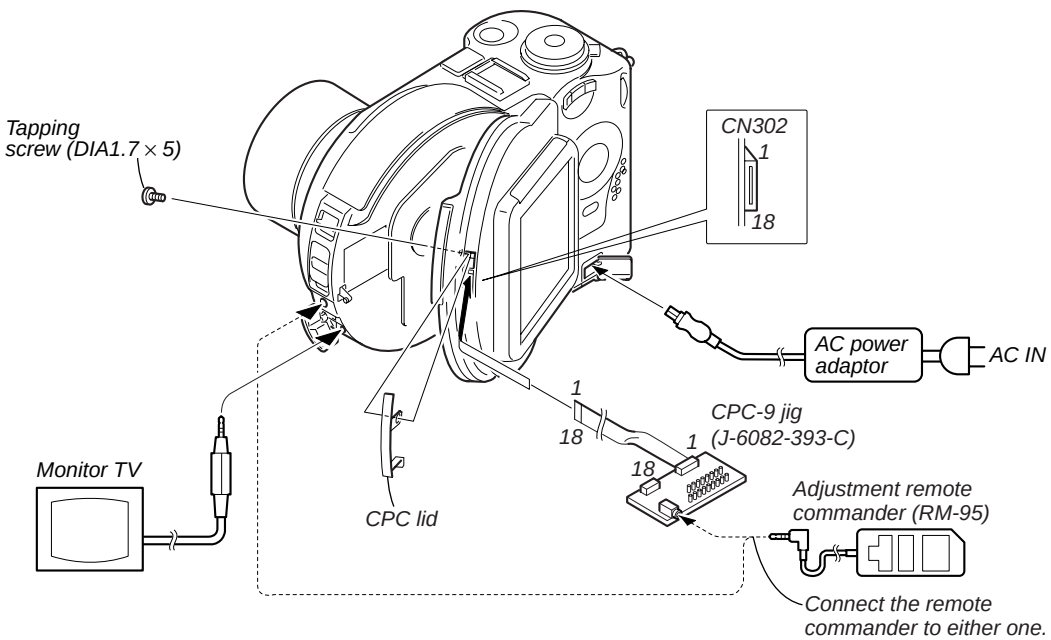
1. **Recording mode indicator**
2. **Image size indicator**
3. **Image number/number of stored images on a disc**
4. **Remaining disc capacity indicator**
5. **Time counter**
6. **Playback image**
7. **Playback bar**
8. **Menu and guide menu**
9. **Playback/pause indicator**
   ▶ is displayed during playback, and ■ during stop.

SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.

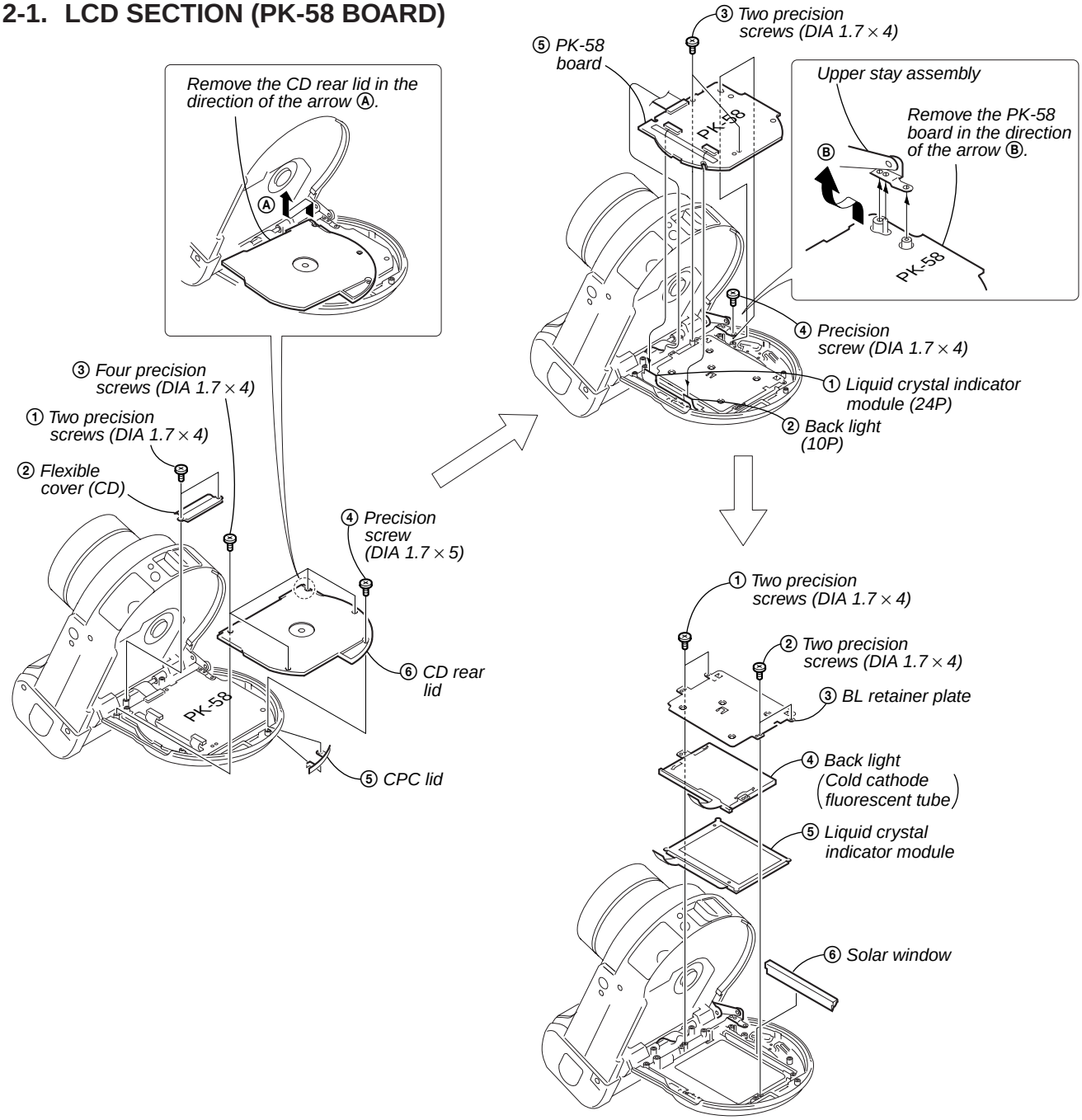

MVC-CD200/CD300
2-1. LCD section (PK-58 board)
PK-58 board service position
2-2. Cabinet (front) section
2-3. Lens section (CD-333/334 board)
2-4. Cabinet (front) assembly (TK-61 board), Control switch block (RL-503)
CD-333/334, TK-61 boards service position
2-5. Battery holder (JK-208 board)
2-6. SY-67 board
SY-67, JK-208, CD-333/334 boards and Camera section check service position
2-7. Stroboscope section (Flash unit)
Flash unit service position
2-8. Base unit (DDX-G2100 complete assembly)
FS-83 board and Base unit (DDX-G2100 complete assembly) check service position
2-16. Disassembling procedure of MD-083 board
MD-083 board service position
Refer to level 3
2-9. Lid CD section
2-10. Function button (FS-83 board)
2-11. Solenoid plunger (Door lock/Stroboscope), CD lock slider
2-12. Control switch block (ZK-503), Strap shaft
2-13. Mode knob, Power spring

[CONNECTION OF THE EQUIPMENT]

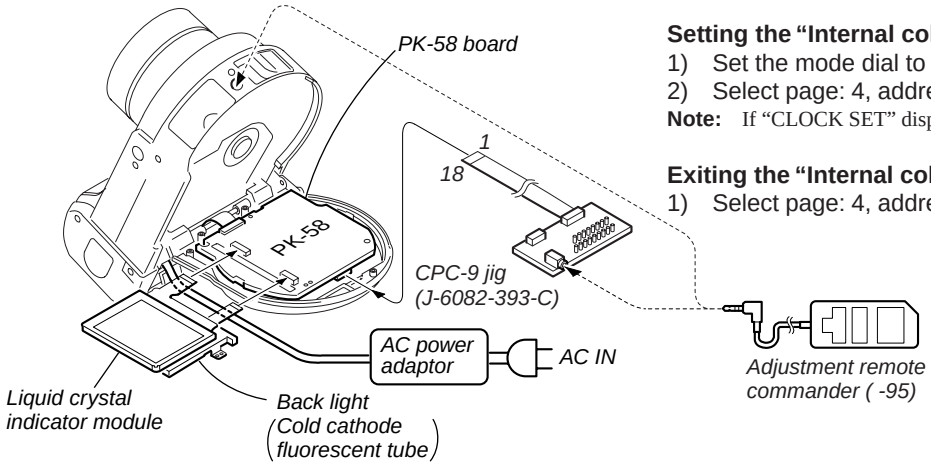


NOTE: Follow the disassembly procedure in the numerical order given.

2-1. LCD SECTION (PK-58 BOARD)


Remove the CD rear lid in the direction of the arrow Ⓐ.
Ⓐ
③ Four precision screws (DIA 1.7 × 4)
① Two precision screws (DIA 1.7 × 4)
② Flexible cover (CD)
④ Precision screw (DIA 1.7 × 5)
⑥ CD rear lid
⑤ CPC lid
PK-58
⑤ PK-58 board
③ Two precision screws (DIA 1.7 × 4)
Upper stay assembly
Remove the PK-58 board in the direction of the arrow Ⓑ.
Ⓑ
④ Precision screw (DIA 1.7 × 4)
① Liquid crystal indicator module (24P)
② Back light (10P)
① Two precision screws (DIA 1.7 × 4)
② Two precision screws (DIA 1.7 × 4)
③ BL retainer plate
④ Back light Cold cathode fluorescent tube
⑤ Liquid crystal indicator module
⑥ Solar window

[PK-58 BOARD SERVICE POSITION]



Setup before LCD section check

To facilitate the checks, set the "Internal color bar signal" mode using the adjustment remote control before LCD section check.

Setting the "Internal color bar signal" mode.

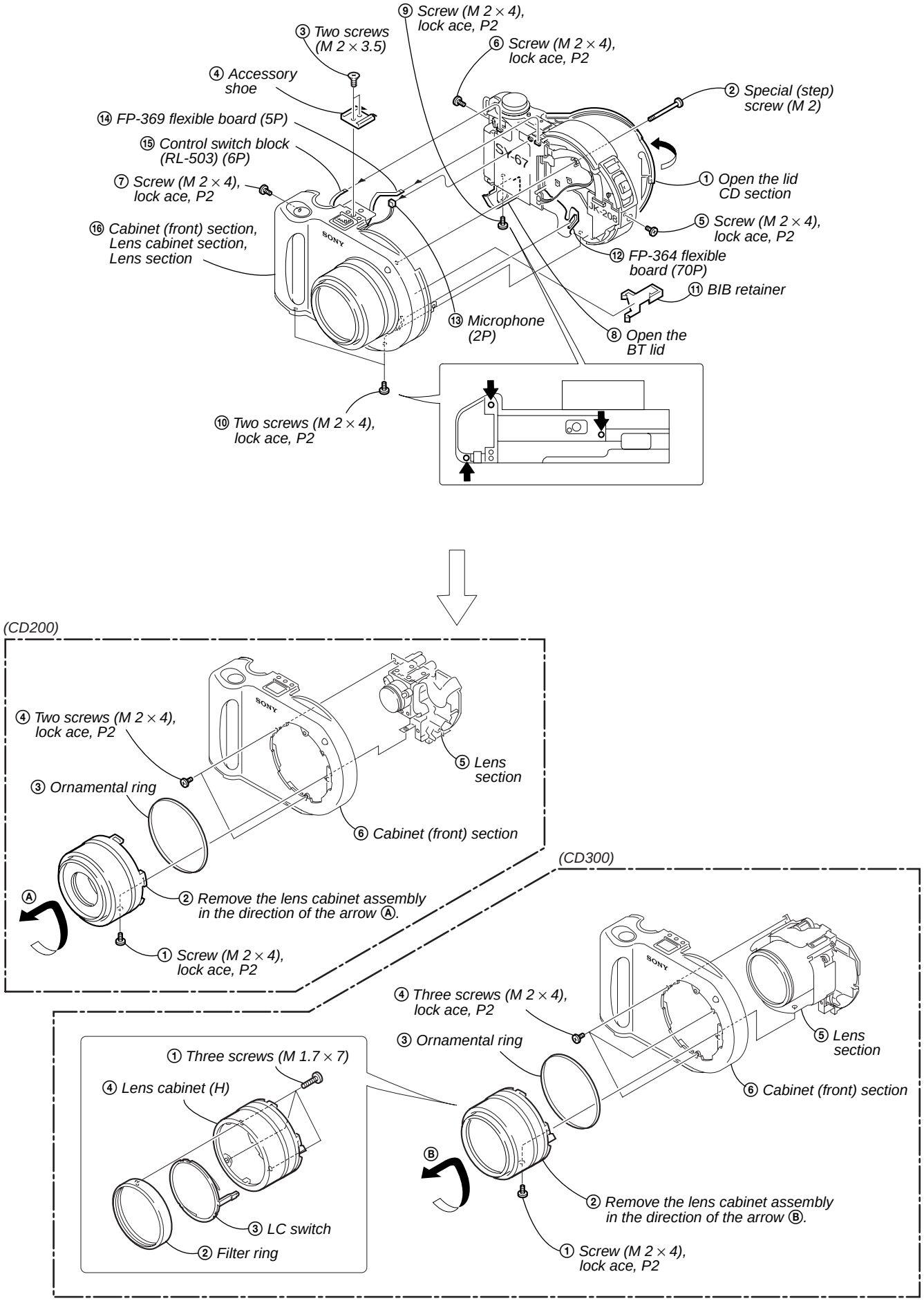
1) Set the mode dial to " 📷 ".
2) Select page: 4, address: F1, and set data: 04.

Note: If "CLOCK SET" display appered in the screen, cancel it.

Exiting the "Internal color bar signal" mode.

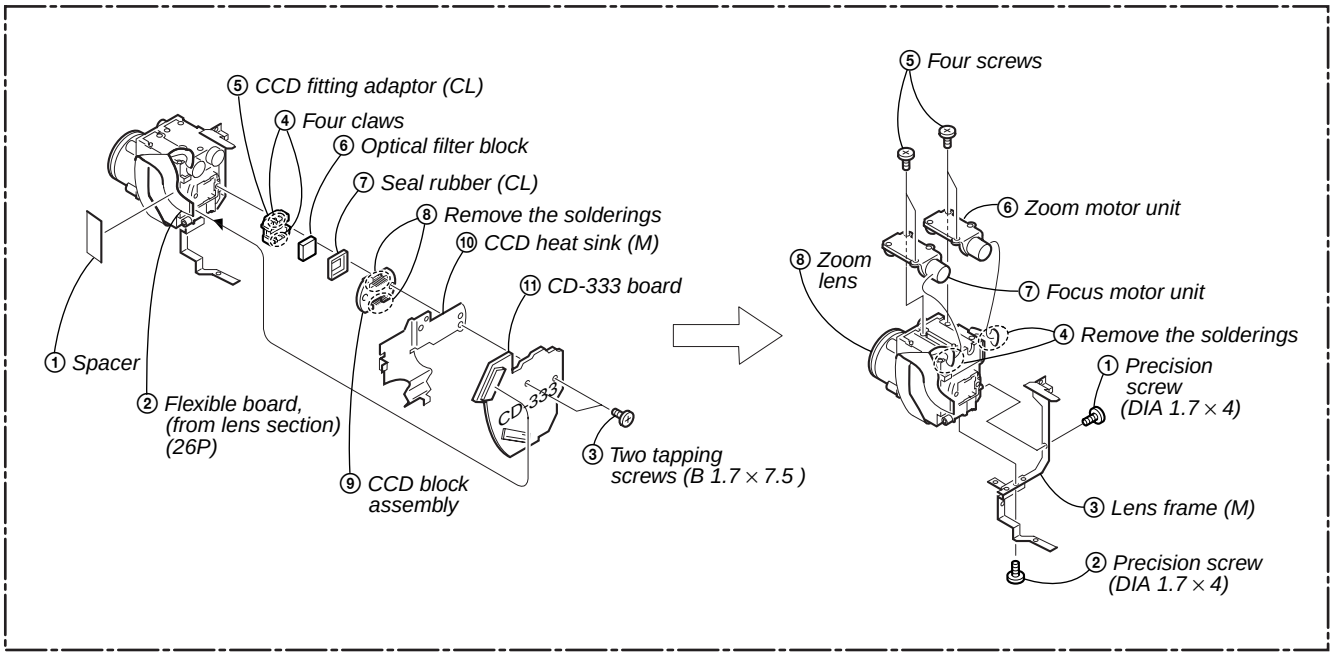
1) Select page: 4, address: F1, and set data: 00.

2-2. CABINET (FRONT) SECTION

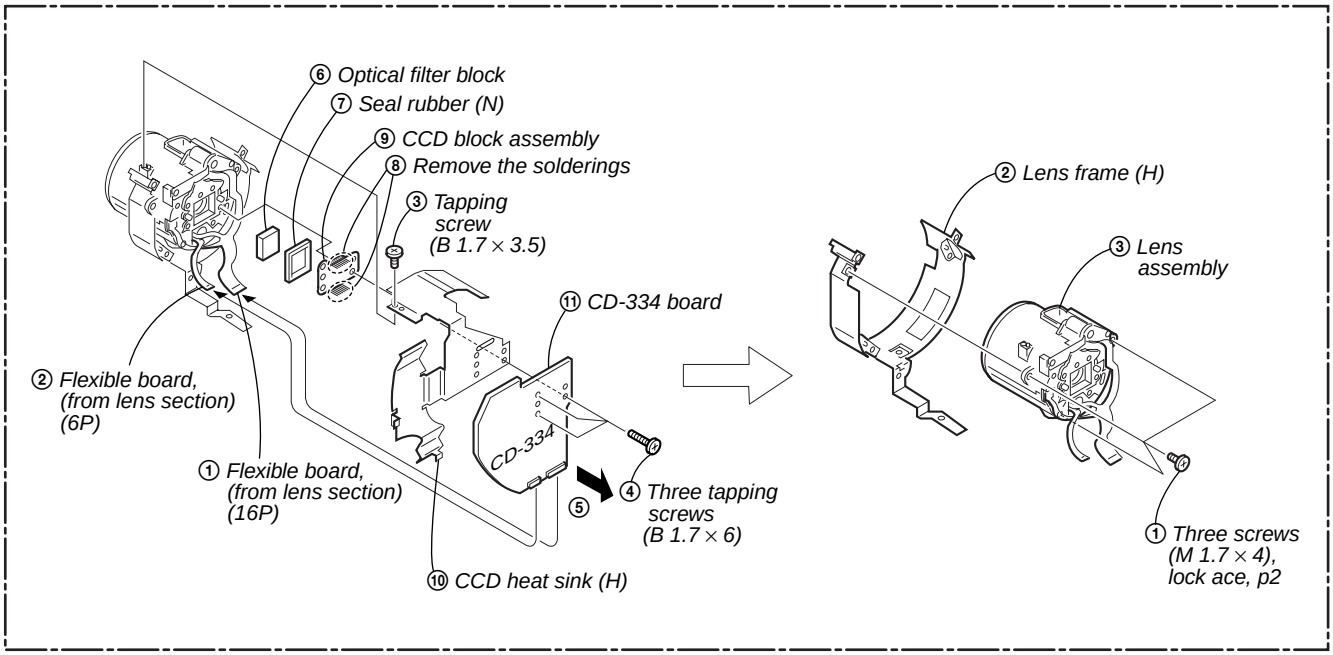

⑨ Screw (M 2 × 4), lock ace, P2
③ Two screws (M 2 × 3.5)
⑥ Screw (M 2 × 4), lock ace, P2
④ Accessory shoe
② Special (step) screw (M 2)
⑭ FP-369 flexible board (5P)
⑮ Control switch block (RL-503) (6P)
⑦ Screw (M 2 × 4), lock ace, P2
① Open the lid CD section
⑤ Screw (M 2 × 4), lock ace, P2
⑯ Cabinet (front) section, Lens cabinet section, Lens section
⑫ FP-364 flexible board (70P)
⑪ BIB retainer
⑬ Microphone (2P)
⑧ Open the BT lid
⑩ Two screws (M 2 × 4), lock ace, P2
(CD200)
④ Two screws (M 2 × 4), lock ace, P2
⑤ Lens section
③ Ornamental ring
⑥ Cabinet (front) section
Ⓐ
② Remove the lens cabinet assembly in the direction of the arrow Ⓐ.
① Screw (M 2 × 4), lock ace, P2
(CD300)
④ Three screws (M 2 × 4), lock ace, P2
⑤ Lens section
③ Ornamental ring
⑥ Cabinet (front) section
① Three screws (M 1.7 × 7)
④ Lens cabinet (H)
Ⓑ
② Remove the lens cabinet assembly in the direction of the arrow Ⓑ.
③ LC switch
② Filter ring
① Screw (M 2 × 4), lock ace, P2

2-3. LENS SECTION (CD-333/334 BOARD)

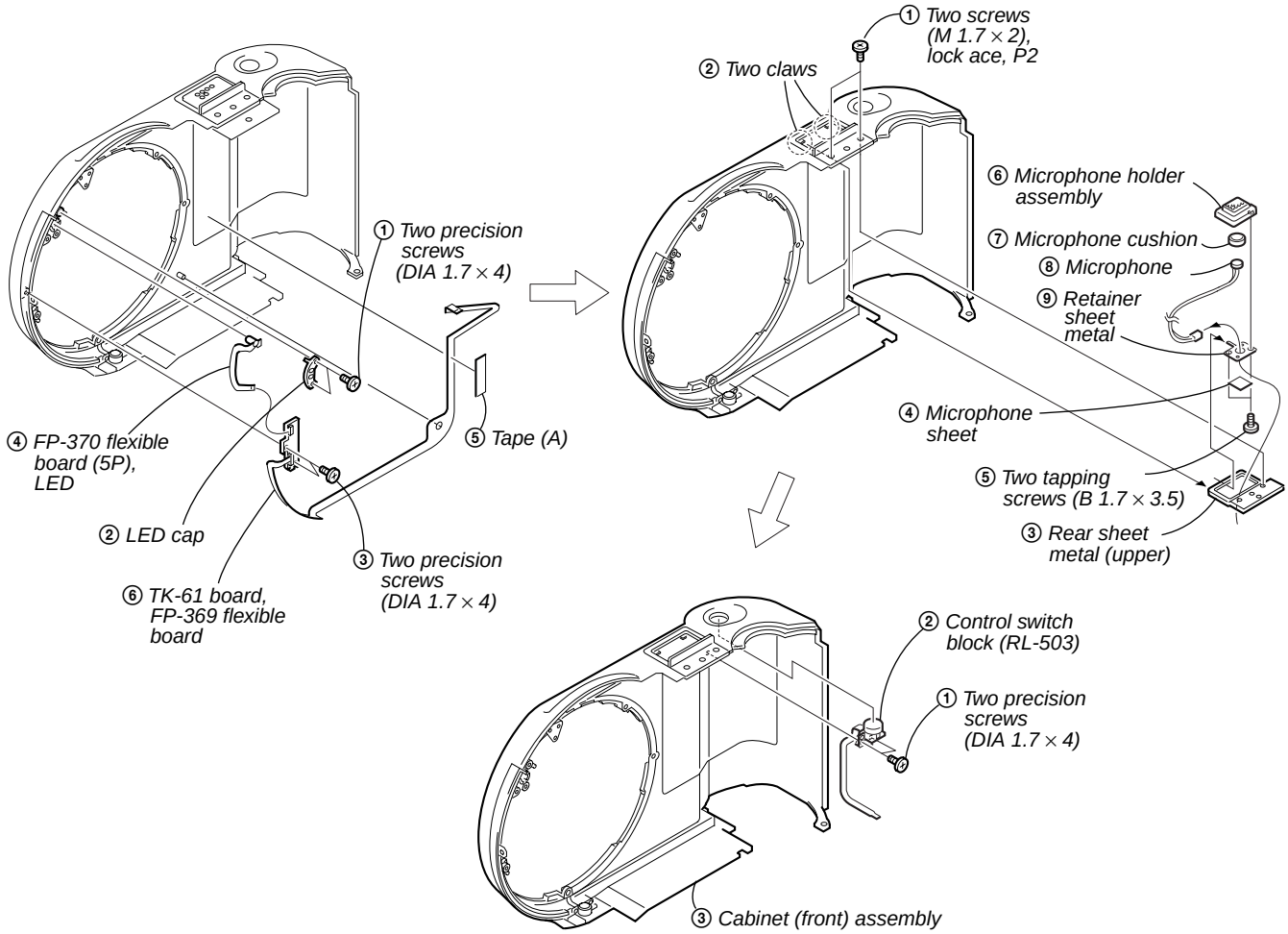
(CD200)


⑤ CCD fitting adaptor (CL)
④ Four claws
⑥ Optical filter block
⑦ Seal rubber (CL)
⑧ Remove the solderings
⑩ CCD heat sink (M)
⑪ CD-333 board
① Spacer
② Flexible board, (from lens section) (26P)
⑨ CCD block assembly
③ Two tapping screws (B 1.7 × 7.5)
CD-333
⑤ Four screws
⑥ Zoom motor unit
⑧ Zoom lens
⑦ Focus motor unit
④ Remove the solderings
① Precision screw (DIA 1.7 × 4)
③ Lens frame (M)
② Precision screw (DIA 1.7 × 4)

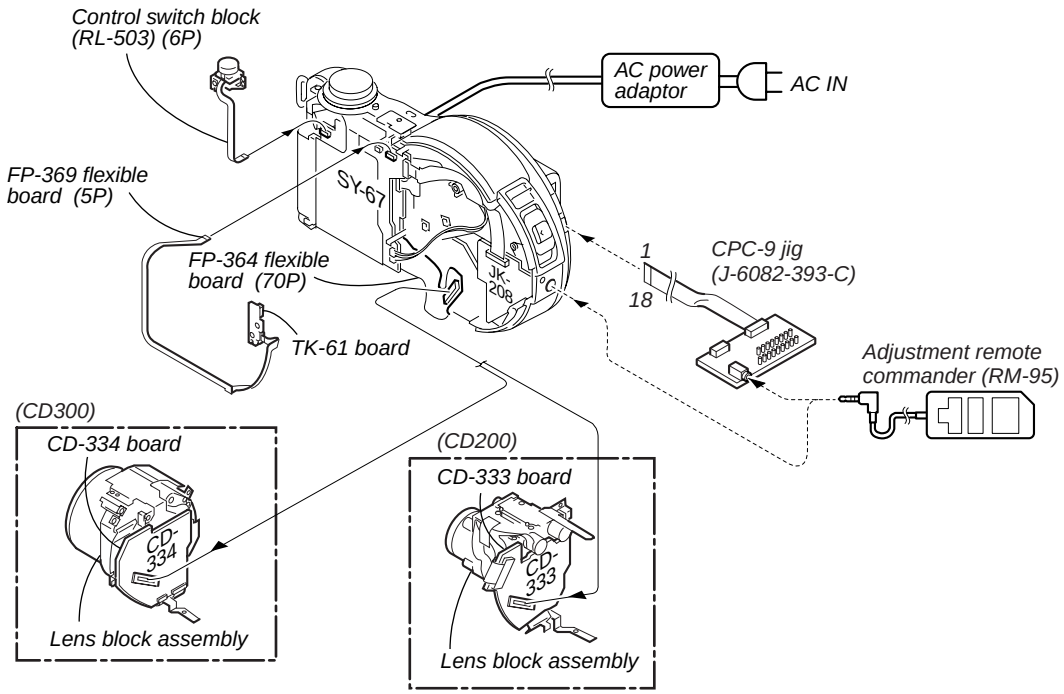
(CD300)


⑥ Optical filter block
⑦ Seal rubber (N)
⑨ CCD block assembly
⑧ Remove the solderings
③ Tapping screw (B 1.7 × 3.5)
⑪ CD-334 board
② Flexible board, (from lens section) (6P)
① Flexible board, (from lens section) (16P)
CD-334
⑤
④ Three tapping screws (B 1.7 × 6)
⑩ CCD heat sink (H)
② Lens frame (H)
③ Lens assembly
① Three screws (M 1.7 × 4), lock ace, p2

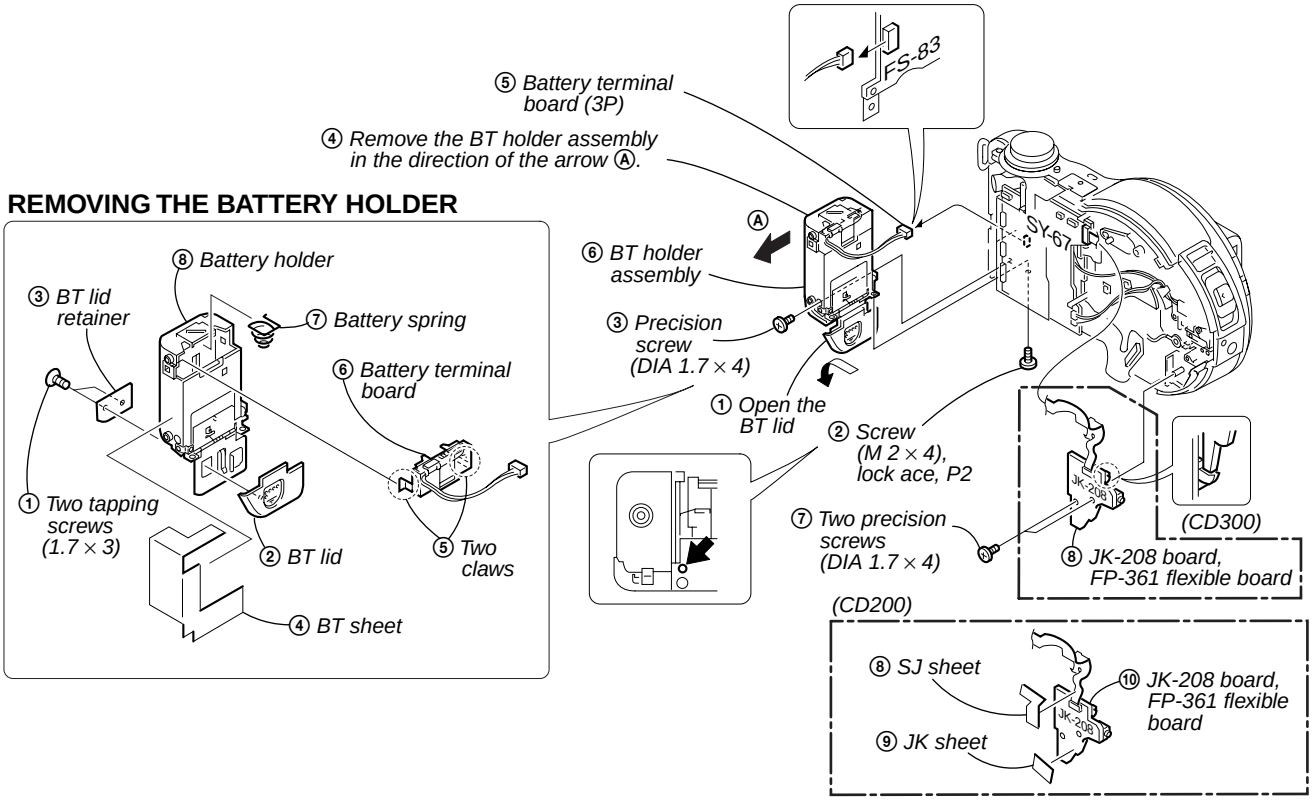
2-4. CABINET (FRONT) ASSEMBLY (TK-61 BOARD), CONTROL SWITCH BLOCK (RL-503)


① Two screws (M 1.7 × 2), lock ace, P2
② Two claws
⑥ Microphone holder assembly
⑦ Microphone cushion
⑧ Microphone
⑨ Retainer sheet metal
④ Microphone sheet
⑤ Two tapping screws (B 1.7 × 3.5)
③ Rear sheet metal (upper)
① Two precision screws (DIA 1.7 × 4)
⑤ Tape (A)
④ FP-370 flexible board (5P), LED
② LED cap
③ Two precision screws (DIA 1.7 × 4)
⑥ TK-61 board, FP-369 flexible board
② Control switch block (RL-503)
① Two precision screws (DIA 1.7 × 4)
③ Cabinet (front) assembly

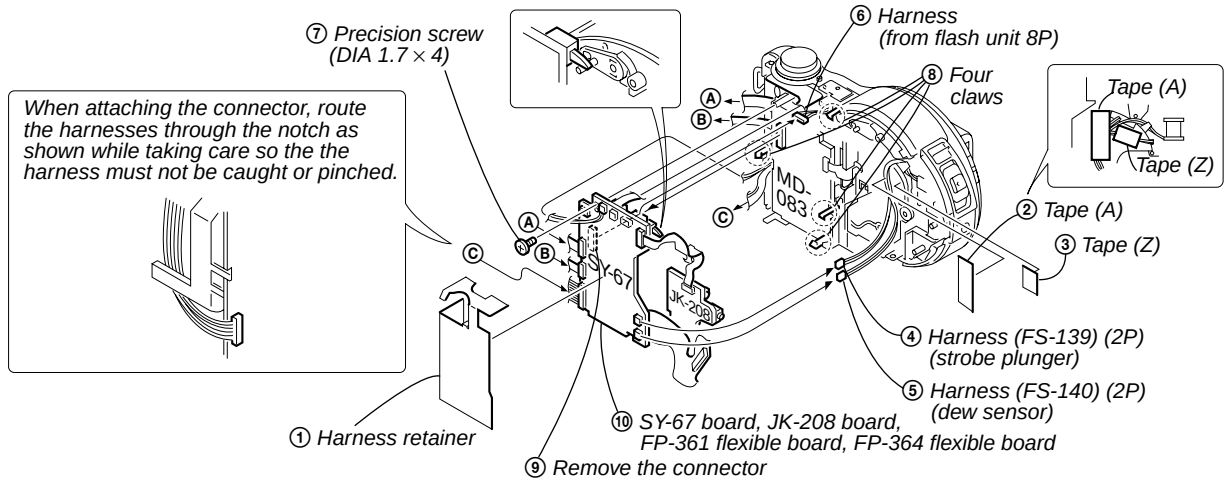
[CD-333/334, TK-61 BOARDS SERVICE POSITION]



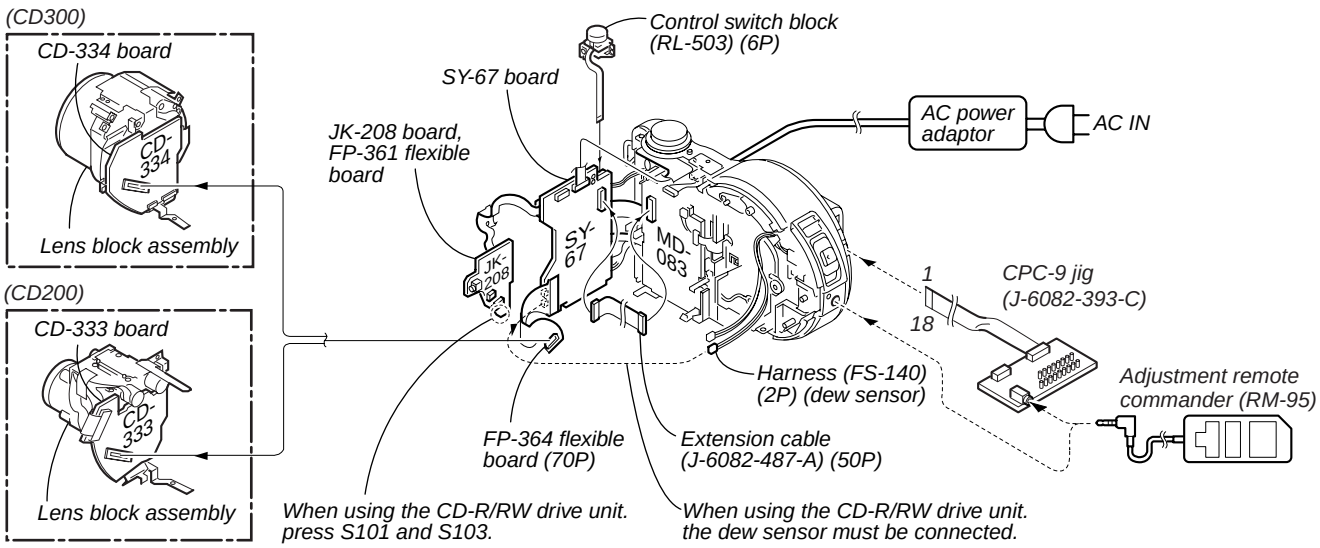
2-5. BATTERY HOLDER (JK-208 BOARD)


⑤ Battery terminal board (3P)
④ Remove the BT holder assembly in the direction of the arrow Ⓐ.
FS-83
SY-67
Ⓐ
⑥ BT holder assembly
③ Precision screw (DIA 1.7 × 4)
① Open the BT lid
② Screw (M 2 × 4), lock ace, P2
⑦ Two precision screws (DIA 1.7 × 4)
(CD300)
⑧ JK-208 board, FP-361 flexible board
(CD200)
⑧ SJ sheet
⑩ JK-208 board, FP-361 flexible board
⑨ JK sheet
REMOVING THE BATTERY HOLDER
⑧ Battery holder
③ BT lid retainer
⑦ Battery spring
⑥ Battery terminal board
① Two tapping screws (1.7 × 3)
② BT lid
⑤ Two claws
④ BT sheet

2-6. SY-67 BOARD

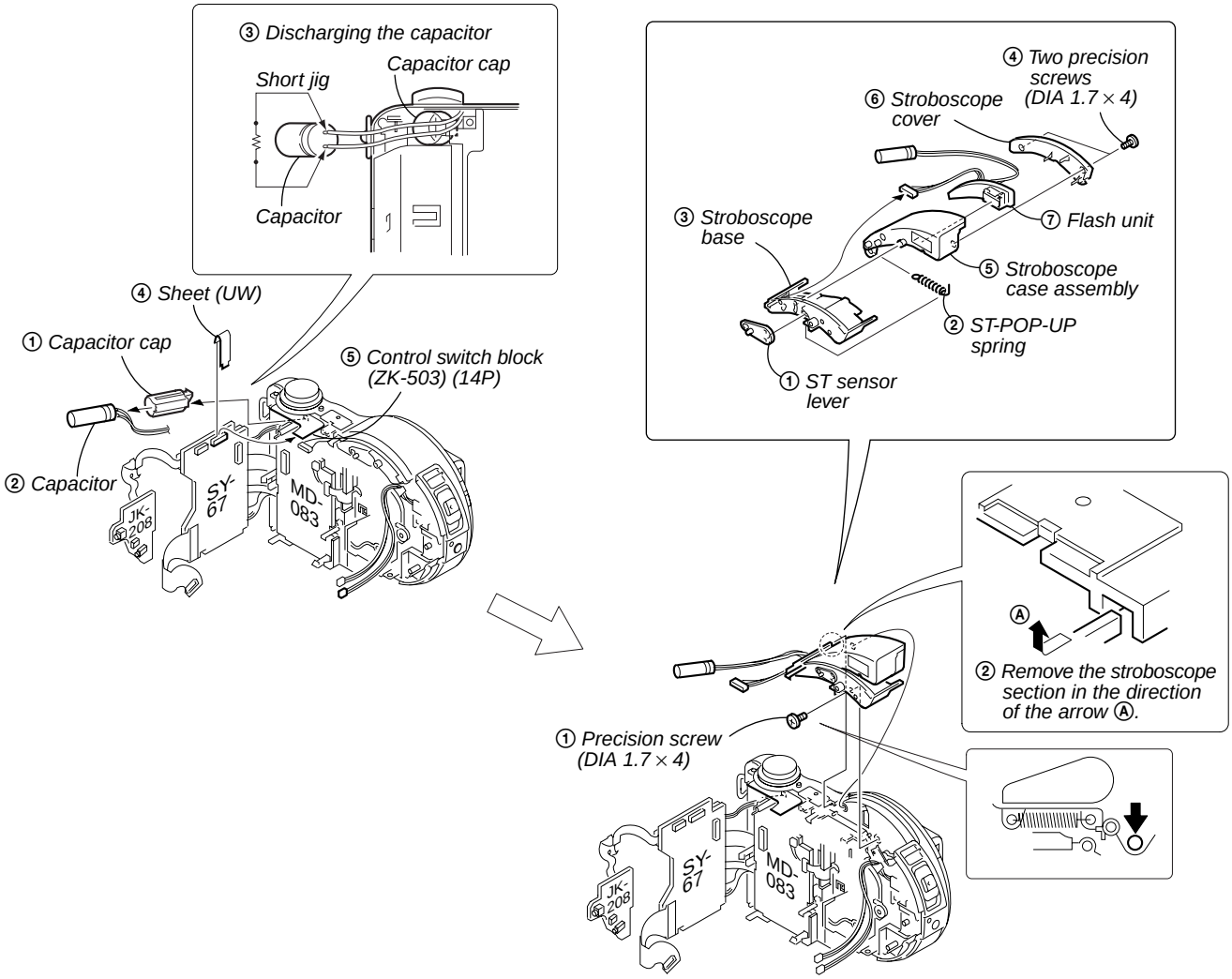

⑦ Precision screw (DIA 1.7 × 4)
⑥ Harness (from flash unit 8P)
⑧ Four claws
Tape (A)
Tape (Z)
When attaching the connector, route the harnesses through the notch as shown while taking care so the the harness must not be caught or pinched.
Ⓐ
Ⓑ
Ⓒ
MD-083
SY-67
JK-208
② Tape (A)
③ Tape (Z)
④ Harness (FS-139) (2P) (strobe plunger)
⑤ Harness (FS-140) (2P) (dew sensor)
① Harness retainer
⑩ SY-67 board, JK-208 board, FP-361 flexible board, FP-364 flexible board
⑨ Remove the connector

[SY-67, JK-208, CD-333/334 BOARDS AND CAMERA SECTION CHECK SERVICE POSITION]

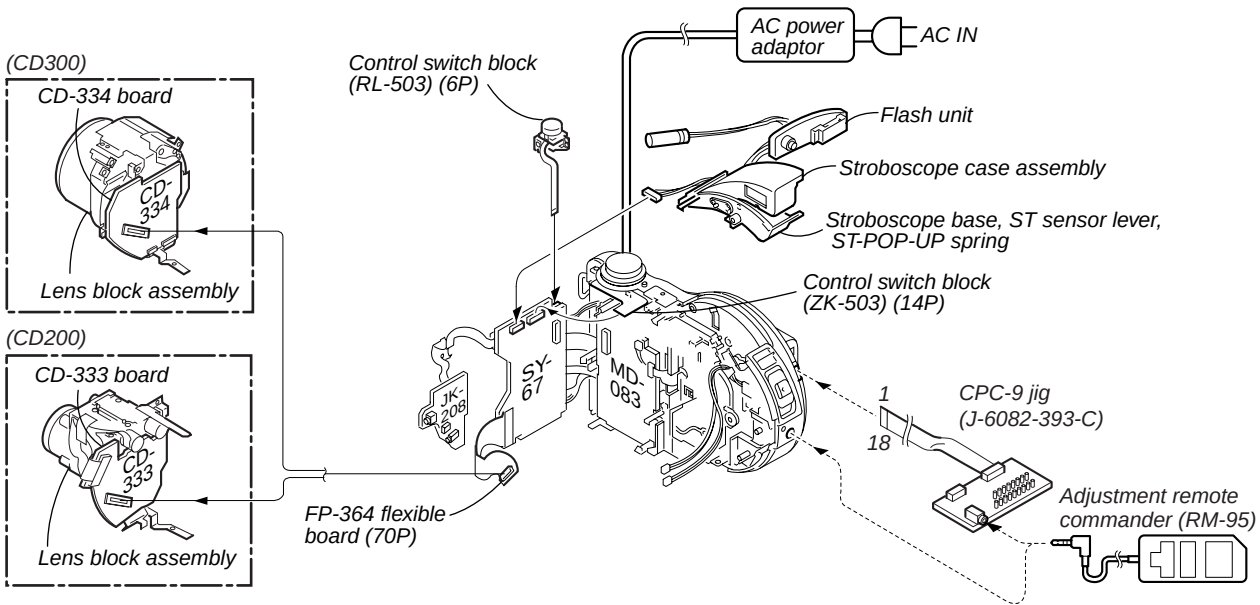


2-7. STROBOSCOPE SECTION (FLASH UNIT)

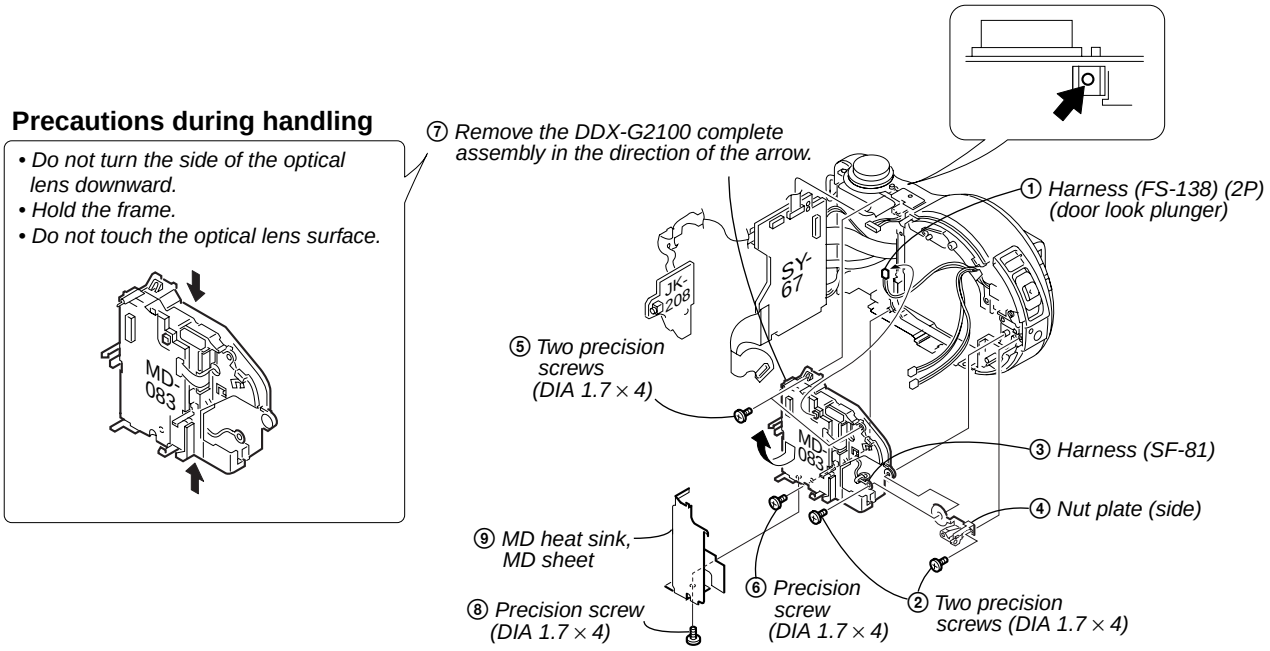
Note: *The charging capacitor is charged to the maximum of 300V.*
There is a danger of electric shock due to the high voltage when the capacitor is touched by bare hand.
Discharge the voltage remained in the capacitor, referring to the Service Note (See page 5).



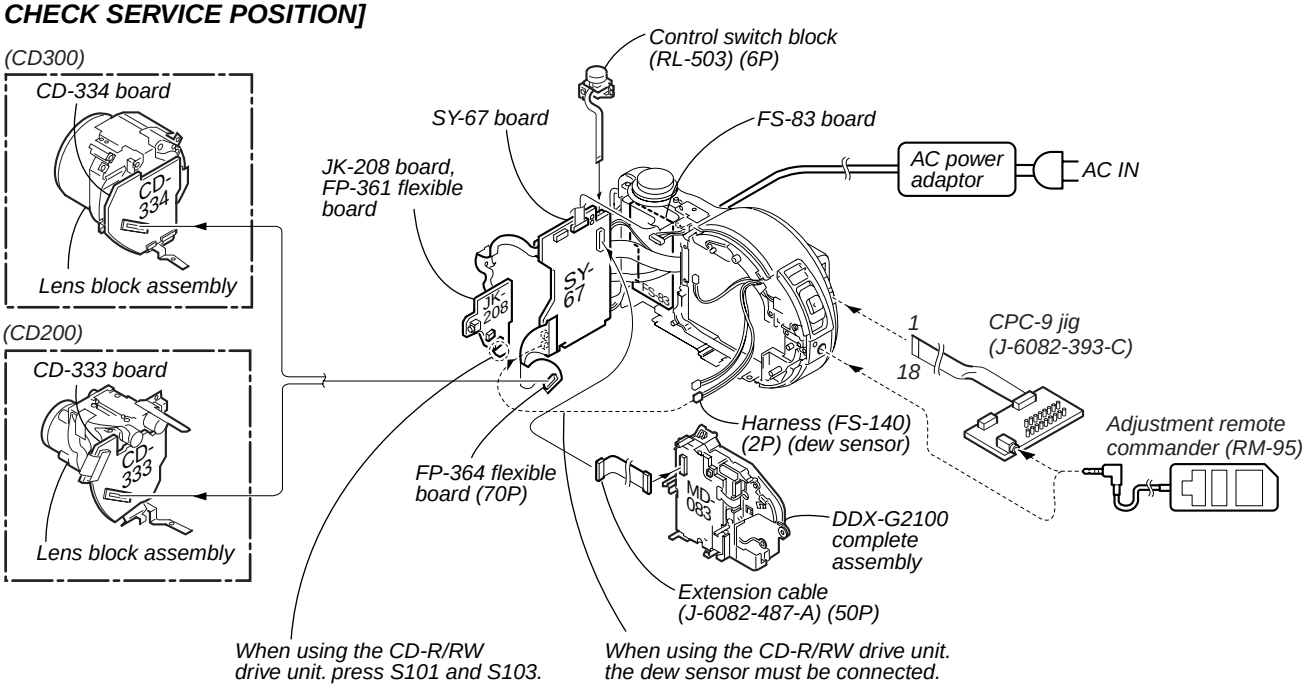
[FLASH UNIT SERVICE POSITION]



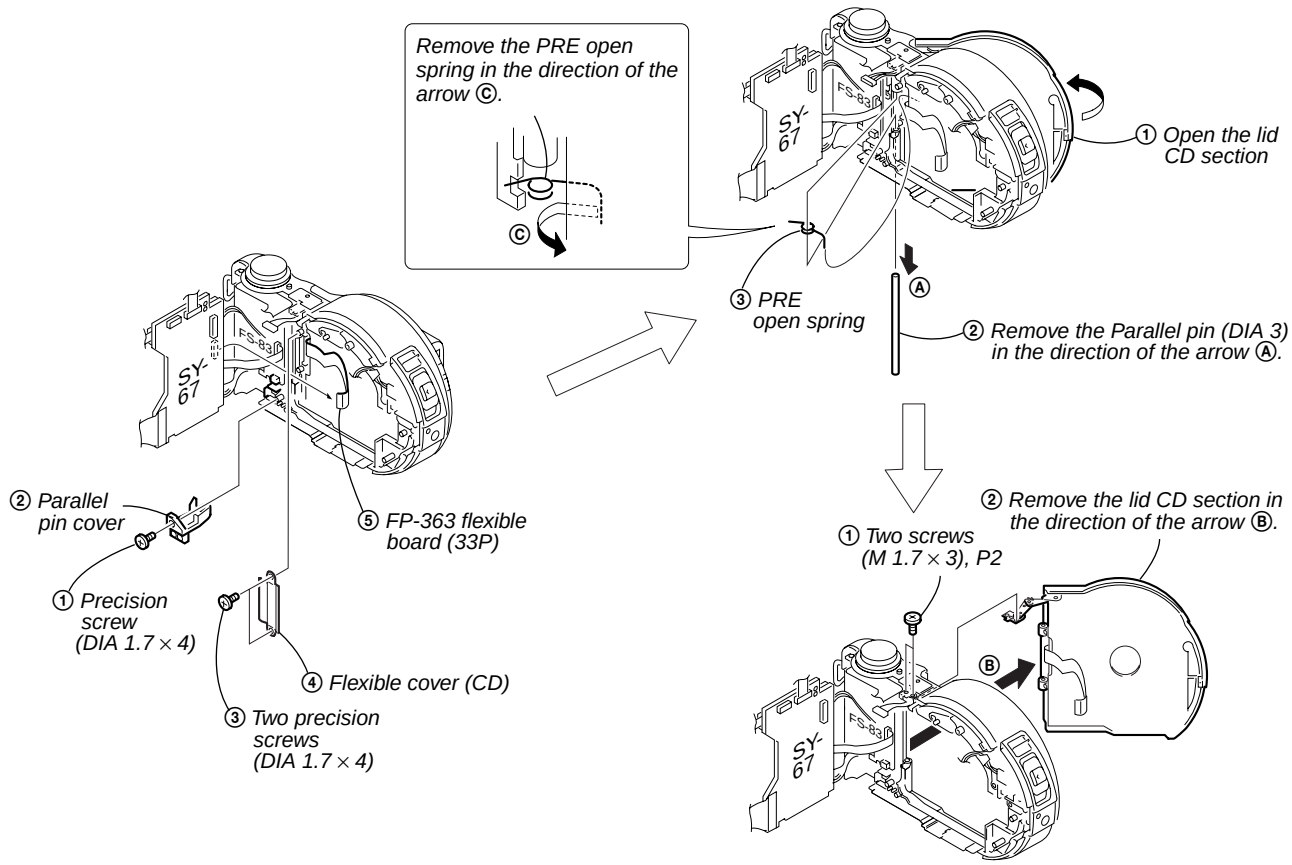
2-8. BASE UNIT (DDX-G2100 COMPLETE ASSEMBLY)


Precautions during handling
• Do not turn the side of the optical lens downward.
• Hold the frame.
• Do not touch the optical lens surface.
MD-083
⑦ Remove the DDX-G2100 complete assembly in the direction of the arrow.
① Harness (FS-138) (2P) (door look plunger)
SY-67
JK-208
⑤ Two precision screws (DIA 1.7 × 4)
MD-083
③ Harness (SF-81)
④ Nut plate (side)
⑨ MD heat sink, MD sheet
⑥ Precision screw (DIA 1.7 × 4)
② Two precision screws (DIA 1.7 × 4)
⑧ Precision screw (DIA 1.7 × 4)

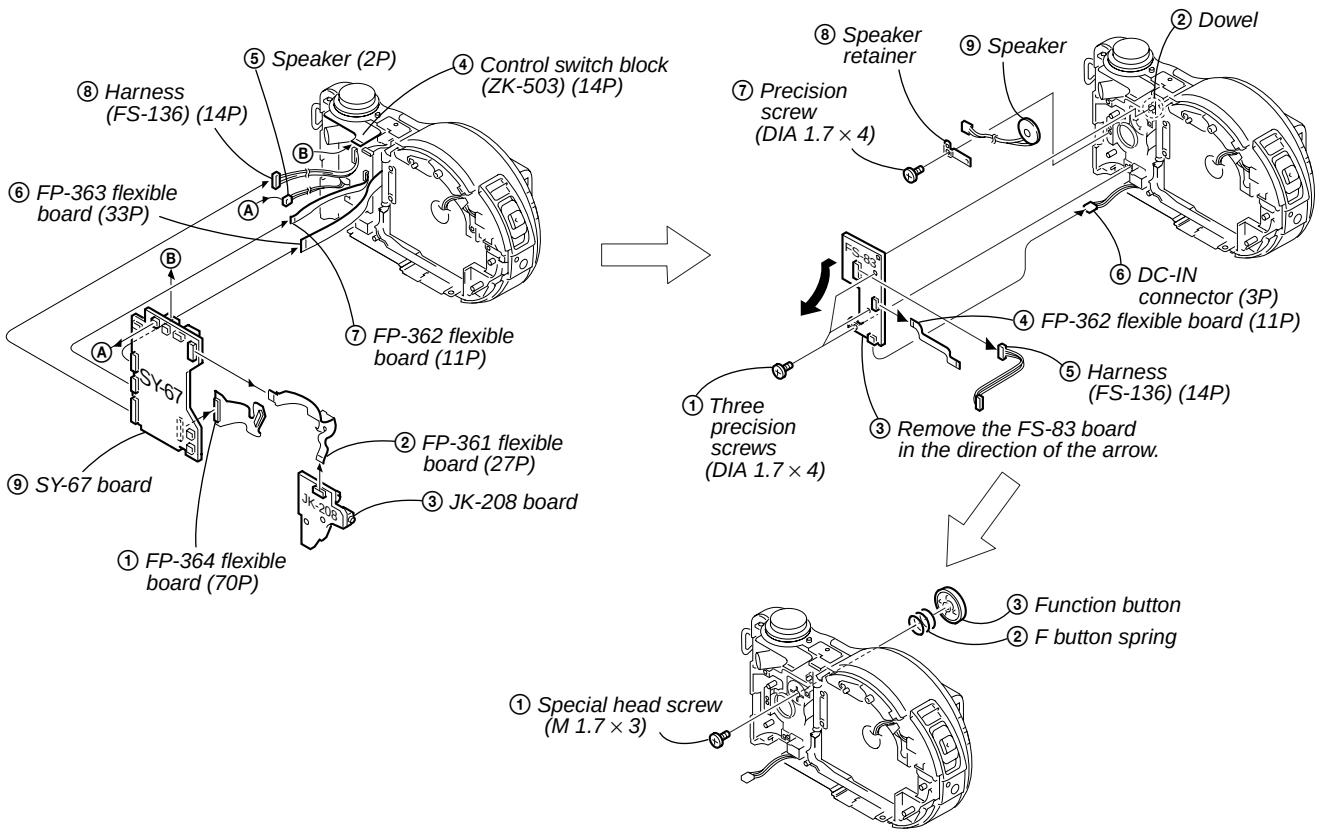
[FS-83 BOARD AND BASE UNIT (DDX-G2100 COMPLETE ASSEMBLY) CHECK SERVICE POSITION]



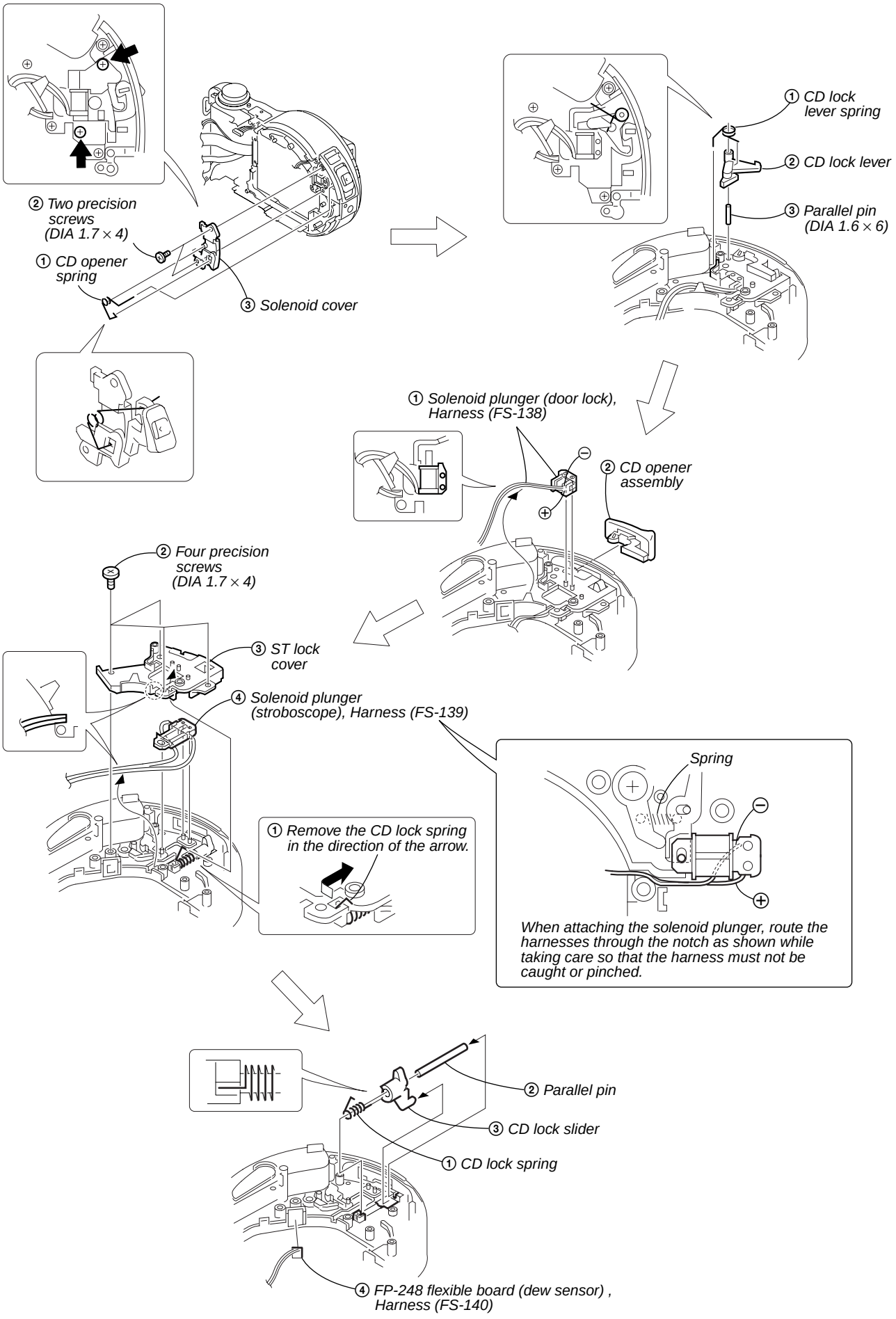
2-9. LID CD SECTION


Remove the PRE open spring in the direction of the arrow Ⓒ.
Ⓒ
① Open the lid CD section
③ PRE open spring
Ⓐ
② Remove the Parallel pin (DIA 3) in the direction of the arrow Ⓐ.
② Parallel pin cover
⑤ FP-363 flexible board (33P)
① Precision screw (DIA 1.7 × 4)
④ Flexible cover (CD)
③ Two precision screws (DIA 1.7 × 4)
② Remove the lid CD section in the direction of the arrow Ⓑ.
① Two screws (M 1.7 × 3), P2
Ⓑ

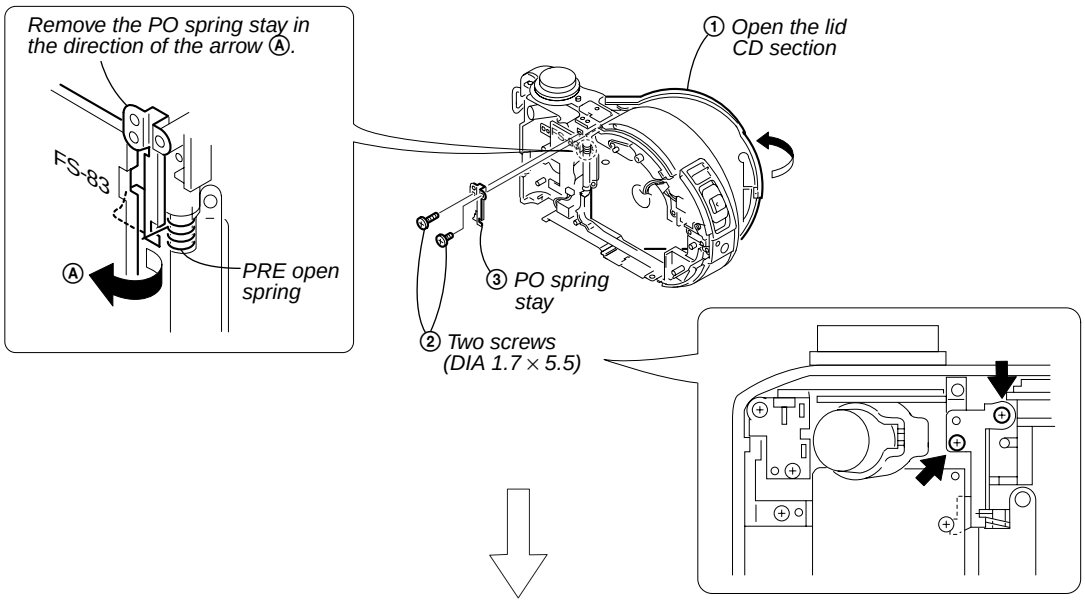
2-10. FUNCTION BUTTON (FS-83 BOARD)

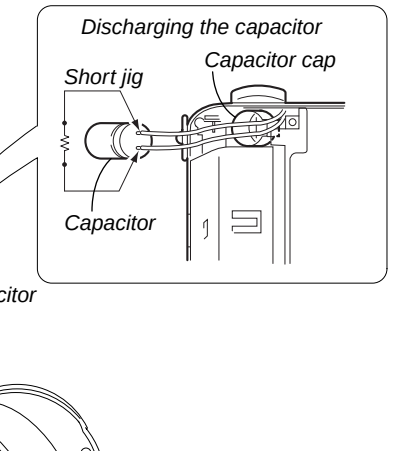

⑤ Speaker (2P)
④ Control switch block (ZK-503) (14P)
⑧ Harness (FS-136) (14P)
⑥ FP-363 flexible board (33P)
⑦ FP-362 flexible board (11P)
② FP-361 flexible board (27P)
③ JK-208 board
⑨ SY-67 board
① FP-364 flexible board (70P)
⑧ Speaker retainer
⑨ Speaker
② Dowel
⑦ Precision screw (DIA 1.7 × 4)
⑥ DC-IN connector (3P)
④ FP-362 flexible board (11P)
⑤ Harness (FS-136) (14P)
① Three precision screws (DIA 1.7 × 4)
③ Remove the FS-83 board in the direction of the arrow.
③ Function button
② F button spring
① Special head screw (M 1.7 × 3)

2-11. SOLENOID PLUNGER (DOOR LOCK/STROBOSCOPE), CD LOCK SLIDER

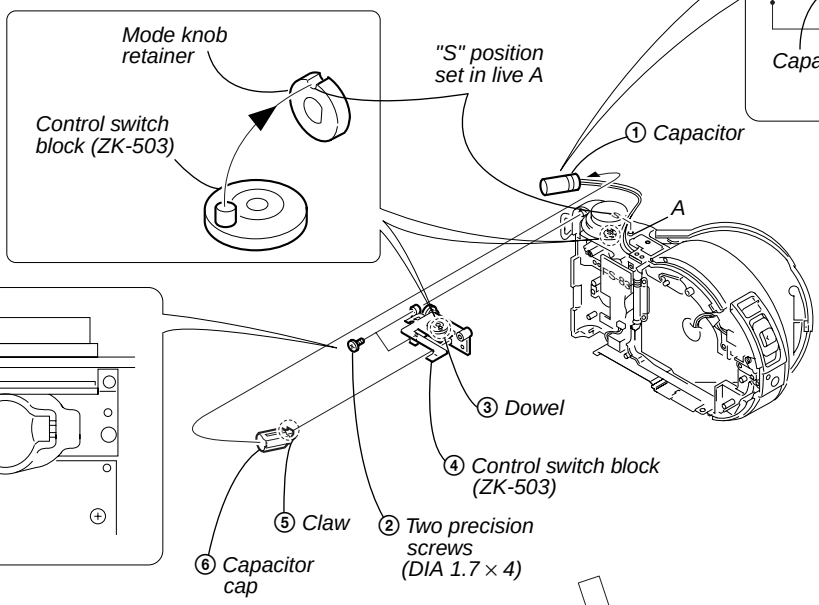

② Two precision screws (DIA 1.7 × 4)
① CD opener spring
③ Solenoid cover
① CD lock lever spring
② CD lock lever
③ Parallel pin (DIA 1.6 × 6)
① Solenoid plunger (door lock), Harness (FS-138)
② CD opener assembly
② Four precision screws (DIA 1.7 × 4)
③ ST lock cover
④ Solenoid plunger (stroboscope), Harness (FS-139)
① Remove the CD lock spring in the direction of the arrow.
Spring
When attaching the solenoid plunger, route the harnesses through the notch as shown while taking care so that the harness must not be caught or pinched.
② Parallel pin
③ CD lock slider
① CD lock spring
④ FP-248 flexible board (dew sensor) , Harness (FS-140)

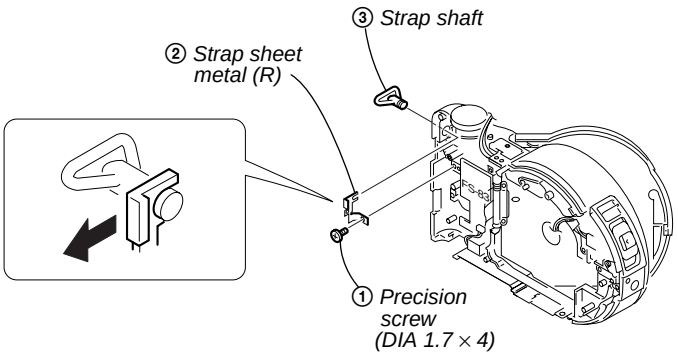
2-12. CONTROL SWITCH BLOCK (ZK-503), STRAP SHAFT


Remove the PO spring stay in the direction of the arrow Ⓐ.
FS-83
Ⓐ
PRE open spring
① Open the lid CD section
③ PO spring stay
② Two screws (DIA 1.7 × 5.5)

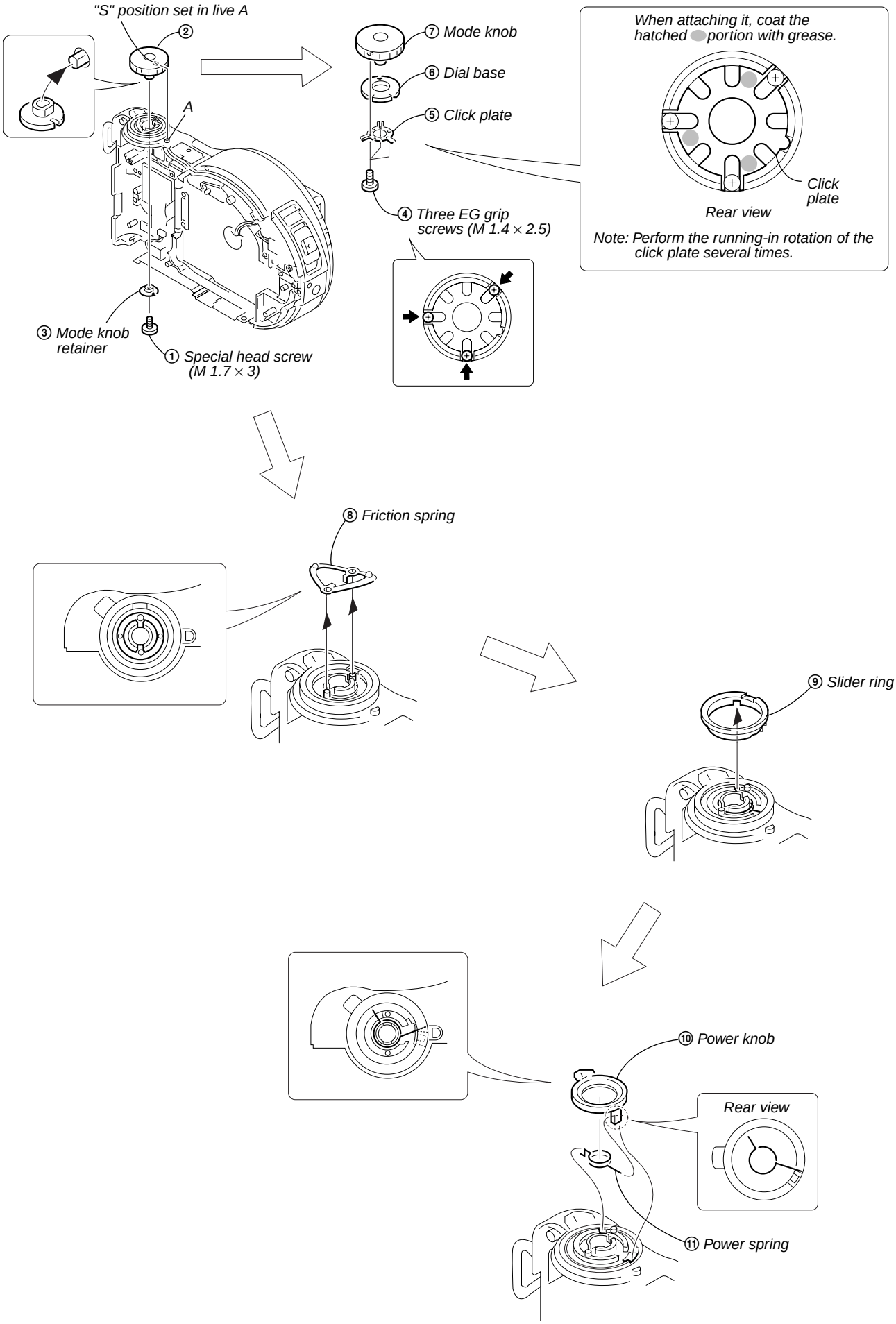


PRECAUTION DURING INSTALLATION

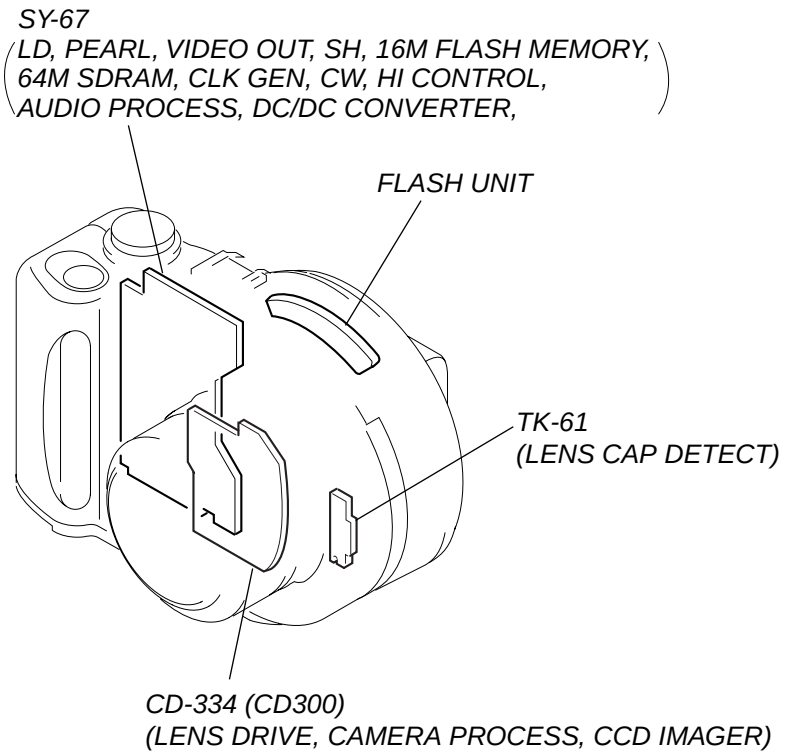


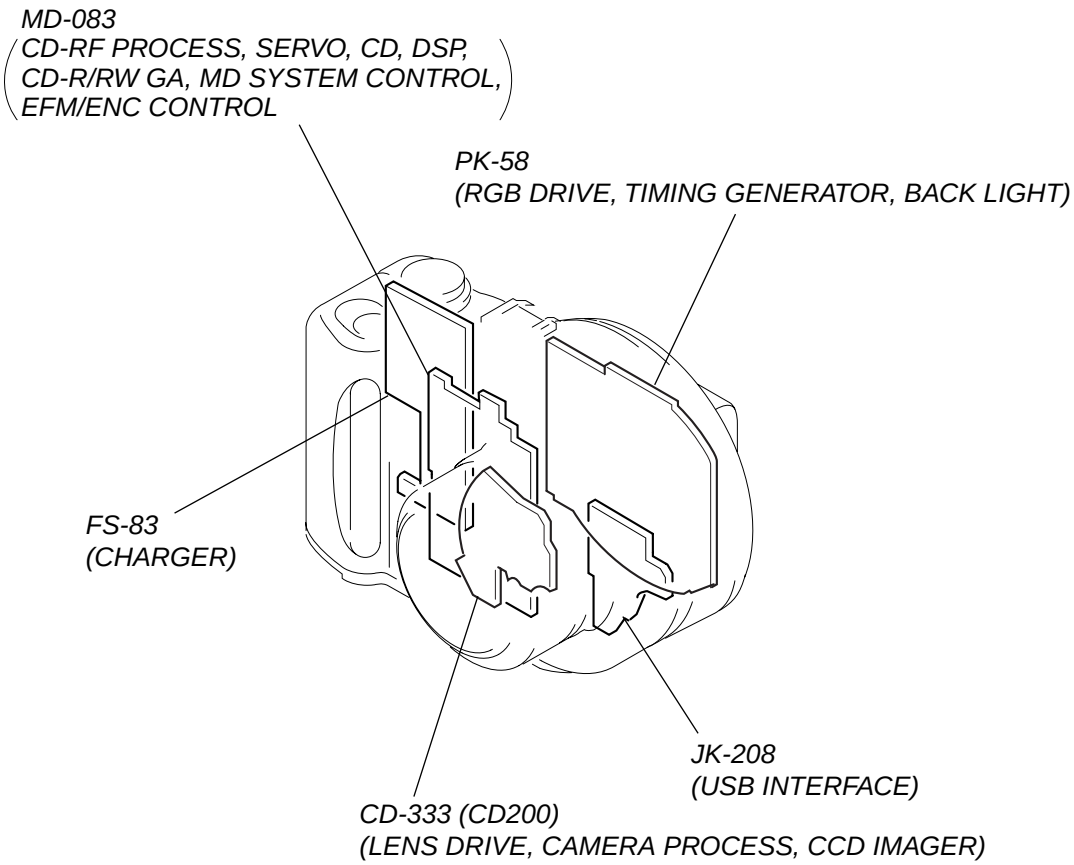


2-13. MODE KNOB, POWER SPRING


"S" position set in live A
②
A
③ Mode knob retainer
① Special head screw (M 1.7 × 3)
⑦ Mode knob
⑥ Dial base
⑤ Click plate
④ Three EG grip screws (M 1.4 × 2.5)
When attaching it, coat the hatched portion with grease.
Click plate
Rear view
Note: Perform the running-in rotation of the click plate several times.
⑧ Friction spring
⑨ Slider ring
⑩ Power knob
Rear view
⑪ Power spring

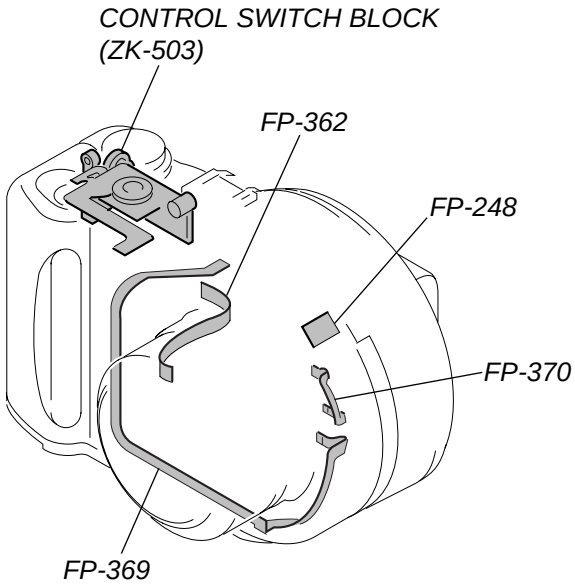
2-14. CIRCUIT BOARDS LOCATION

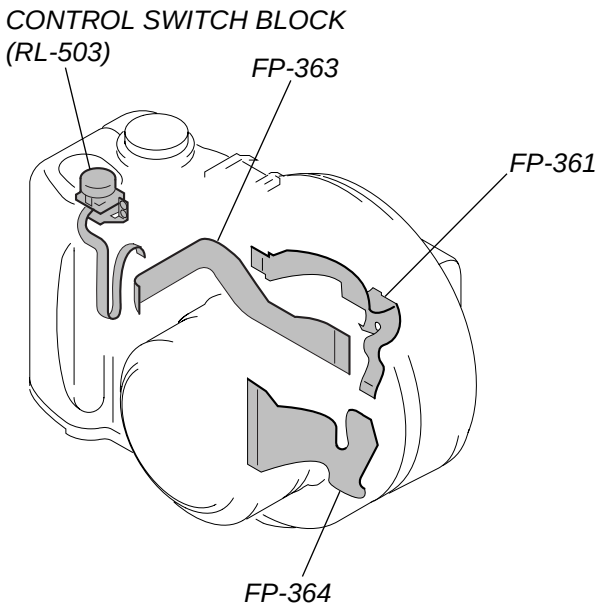




2-15. FLEXIBLE BOARDS LOCATION

The flexible boards contained in the mechanism deck and that in the zoom lens are not shown.



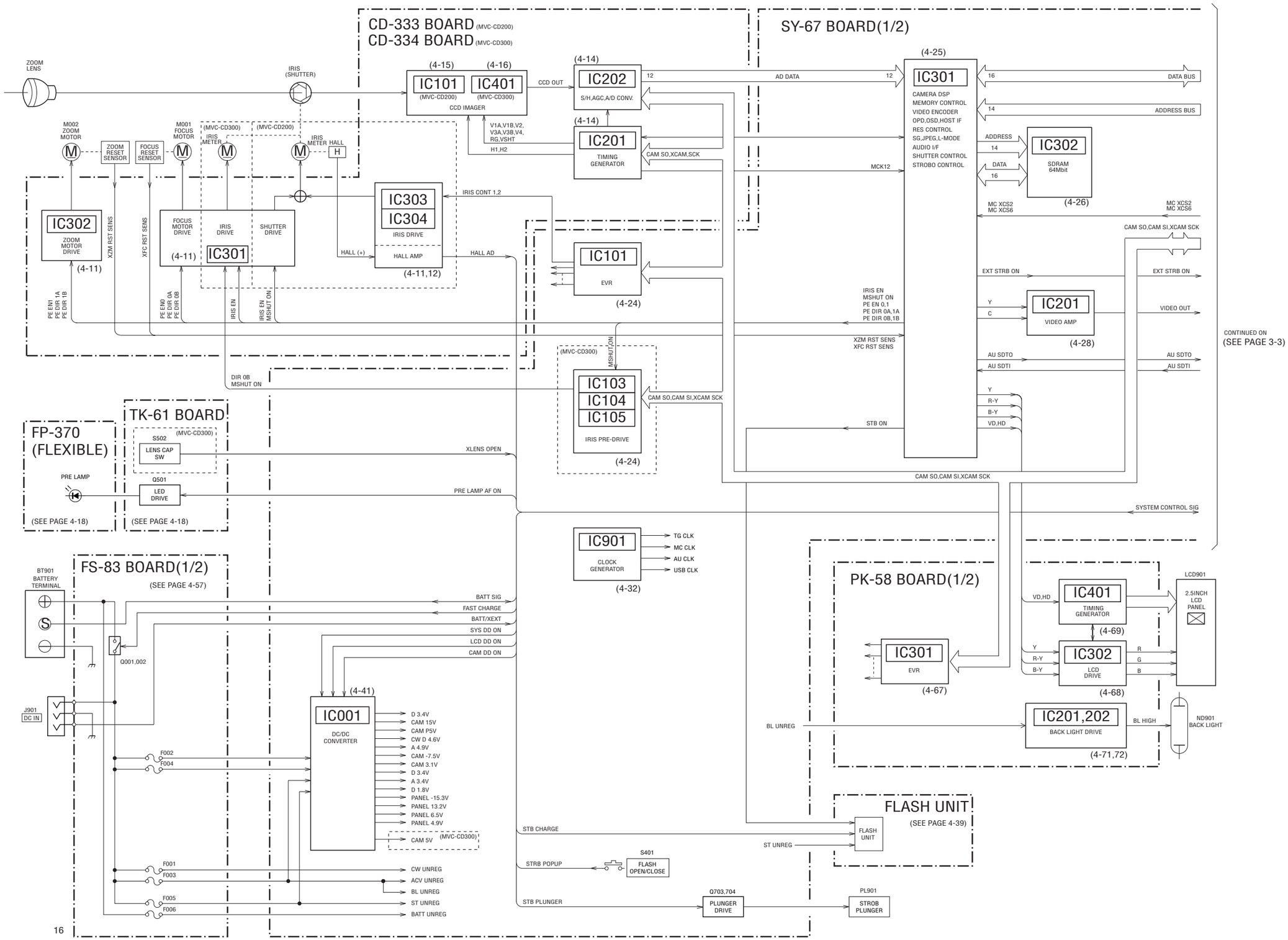


Disassembling procedure of Mechanism deck (DDX-G2100 COMPLETE ASSEMBLY) are not shown.
Pages 2-15 and 2-16 are not shown.

SECTION 3
BLOCK DIAGRAMS

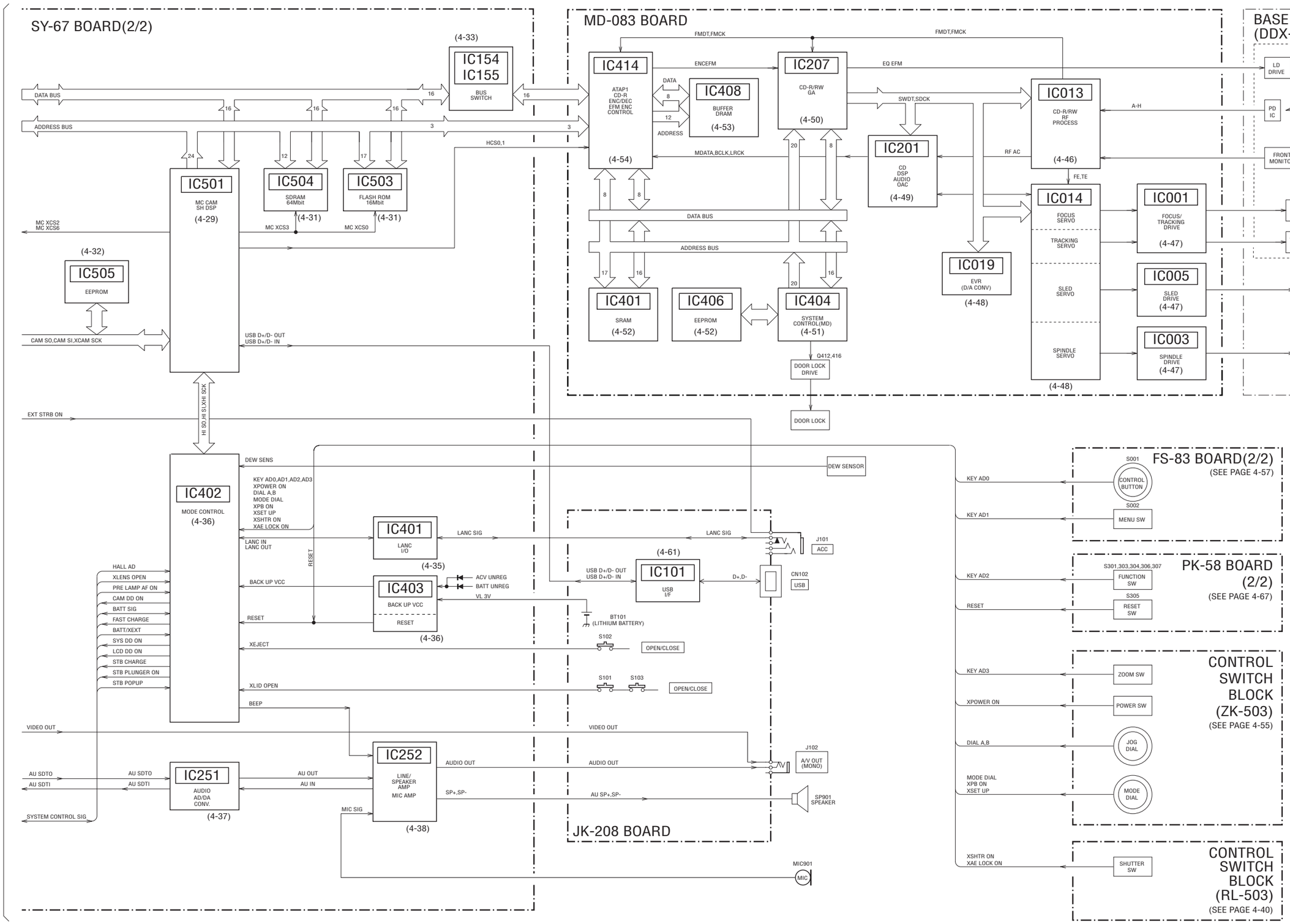
3-1. OVERALL BLOCK DIAGRAM (1/2)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



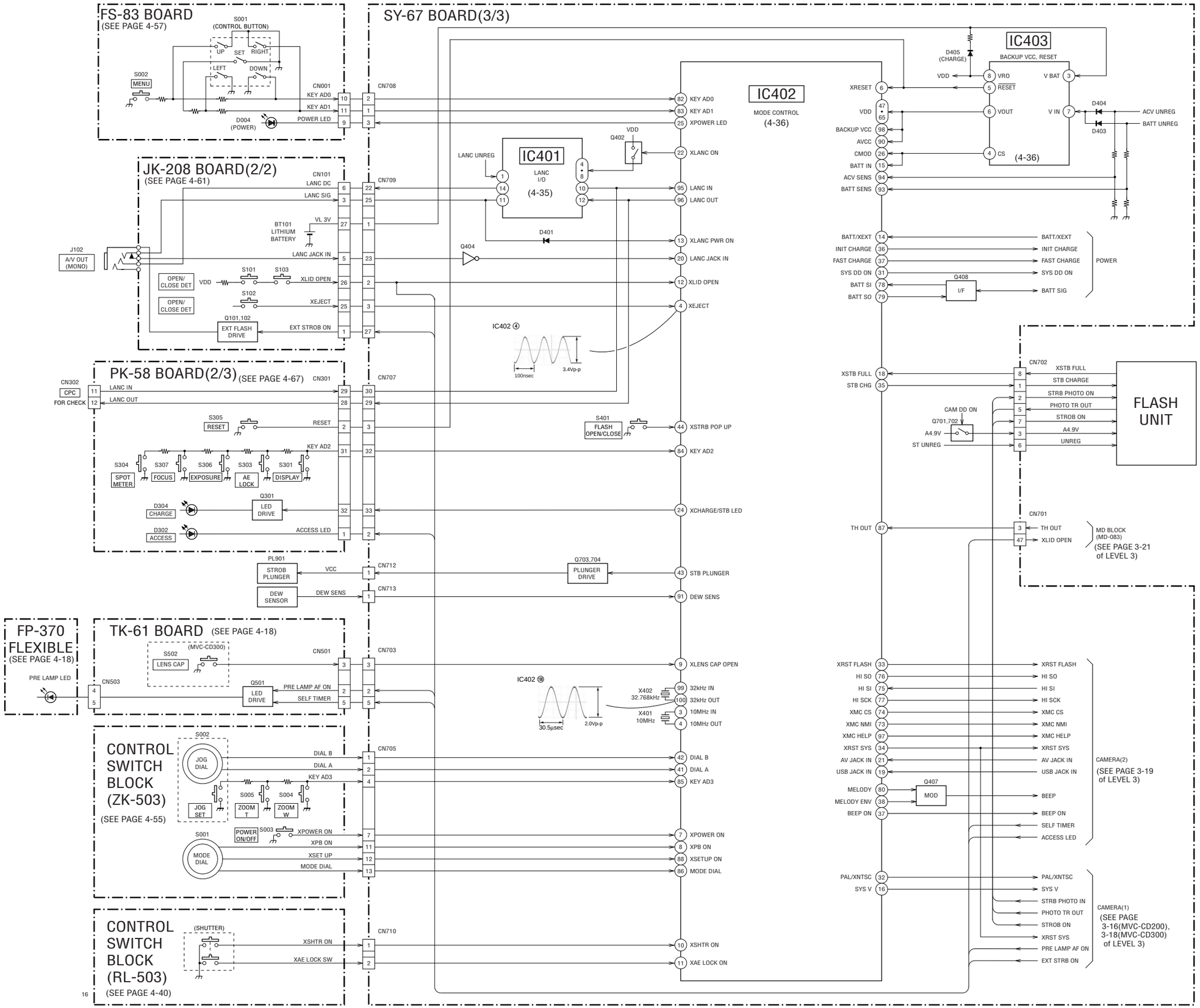
3-2. OVERALL BLOCK DIAGRAM (2/2)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



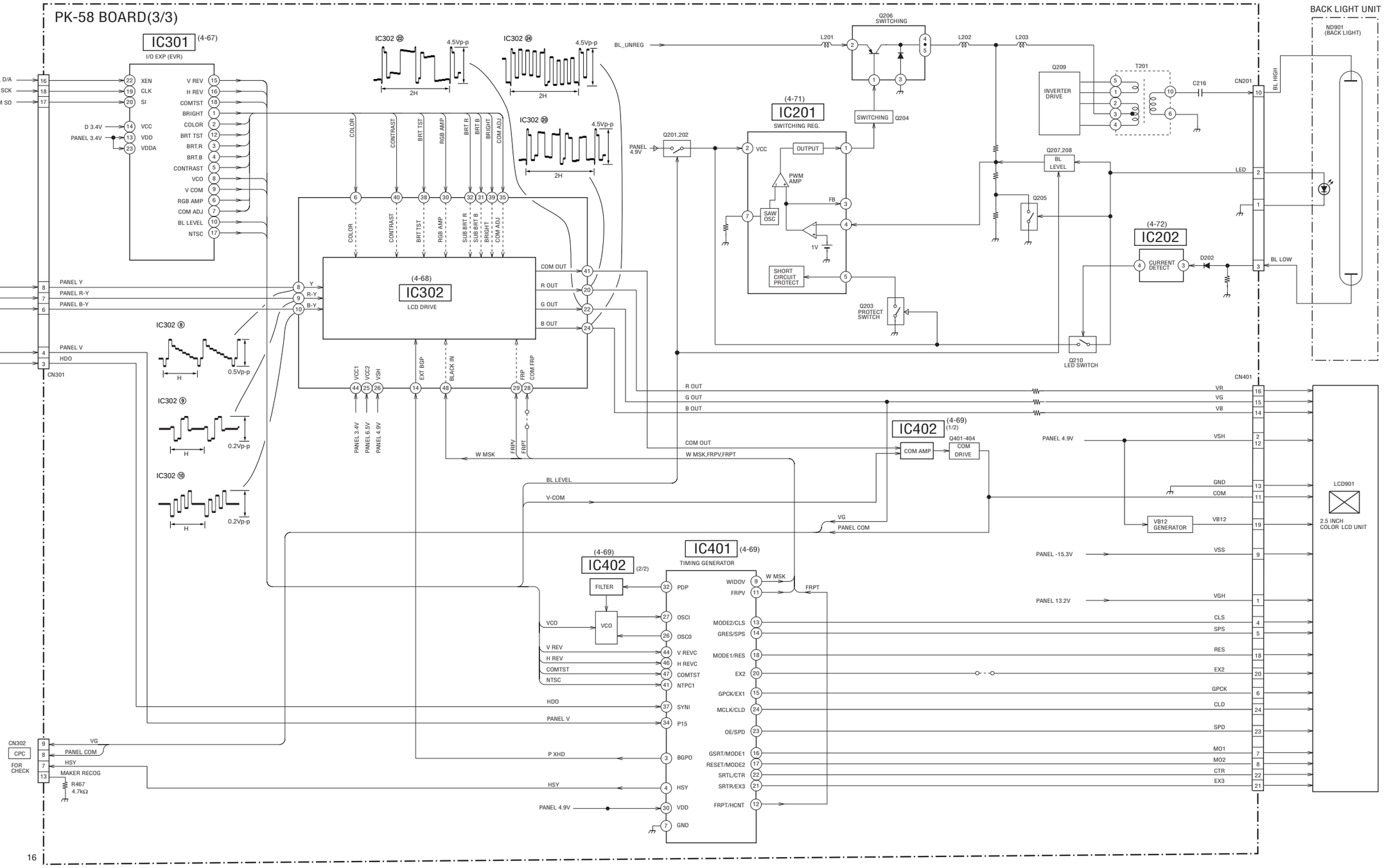
3-3. MODE CONTROL BLOCK DIAGRAM

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



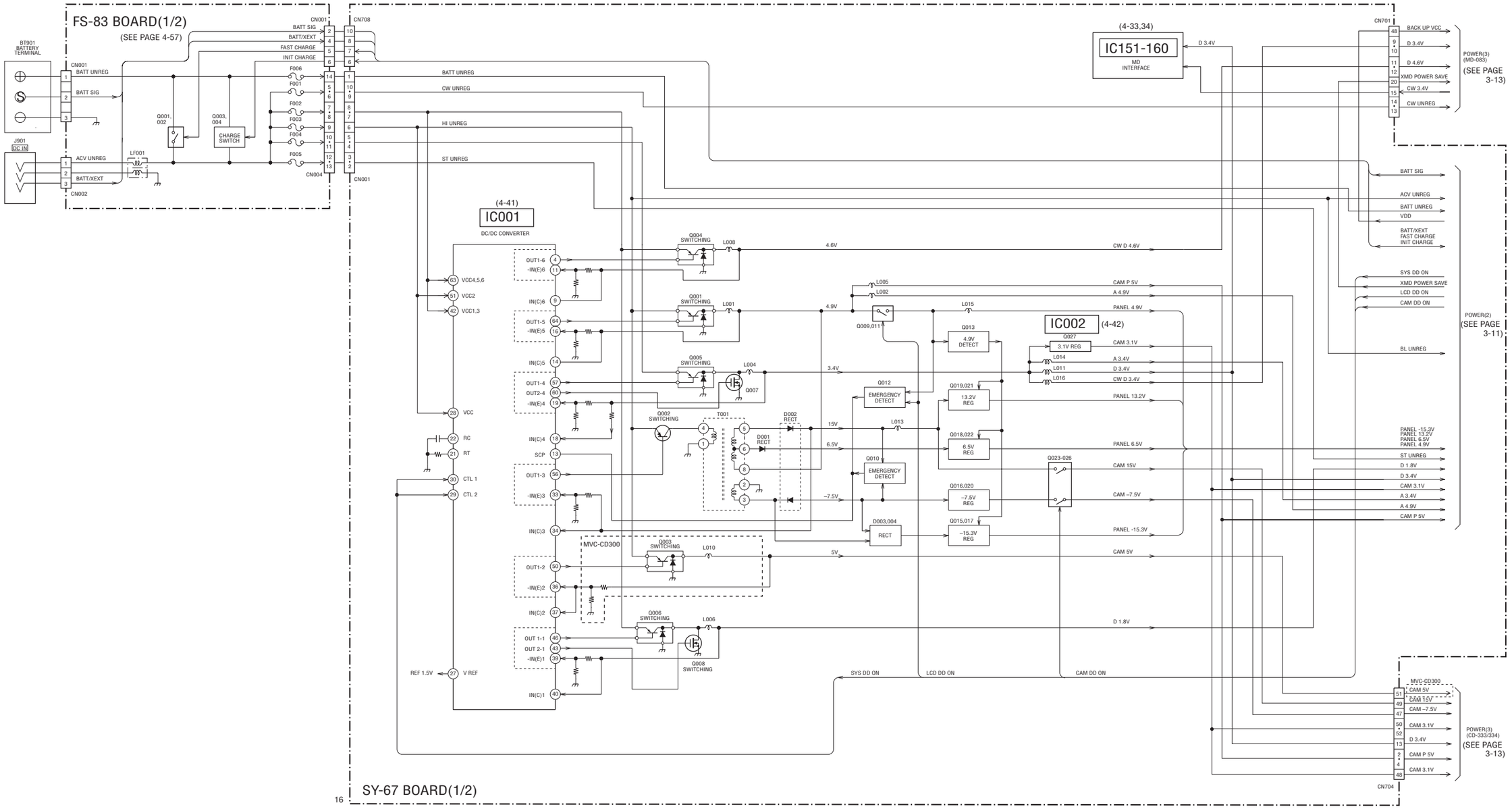
3-4. LCD BLOCK DIAGRAM

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



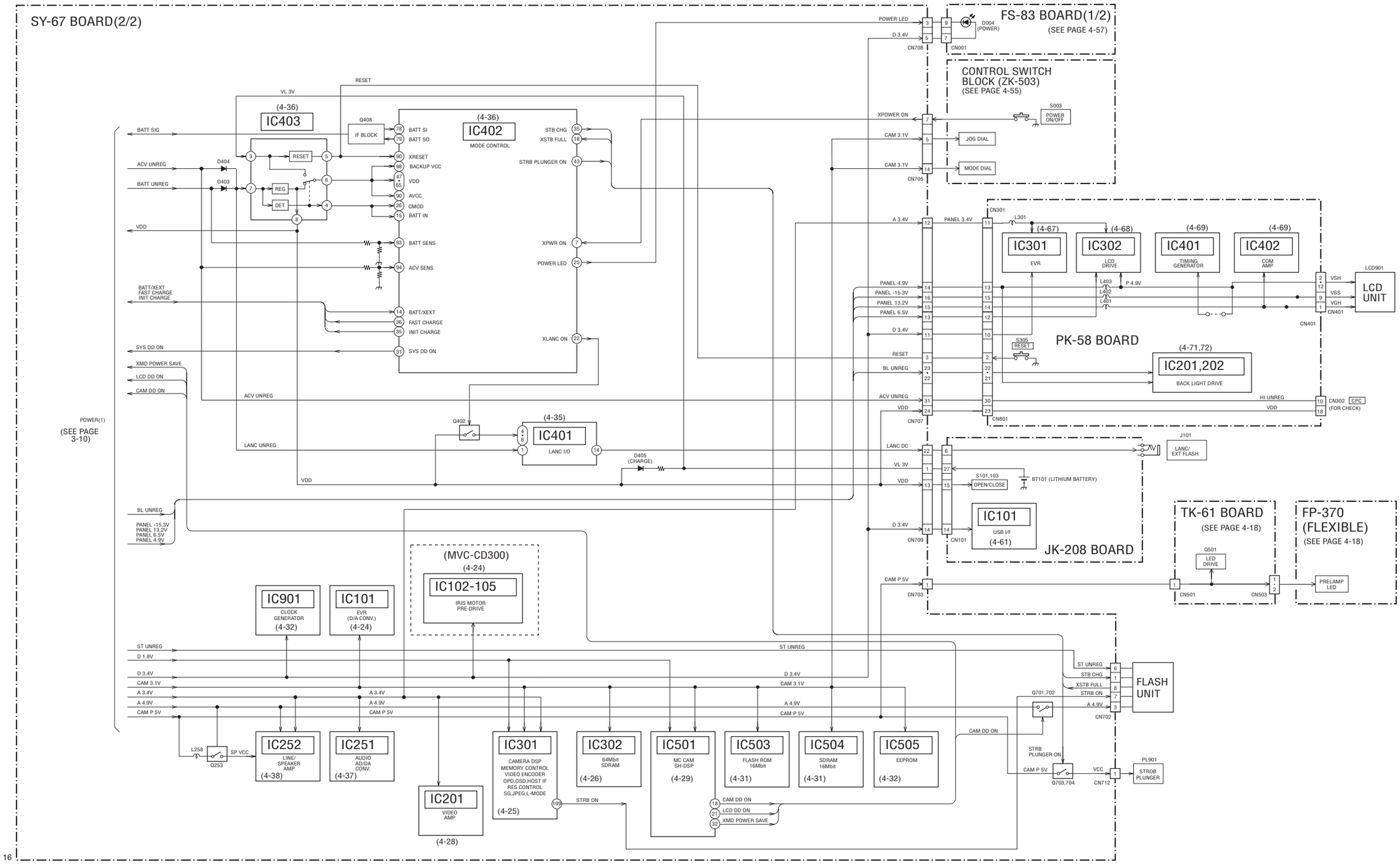
3-5. POWER BLOCK DIAGRAM (1/3)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



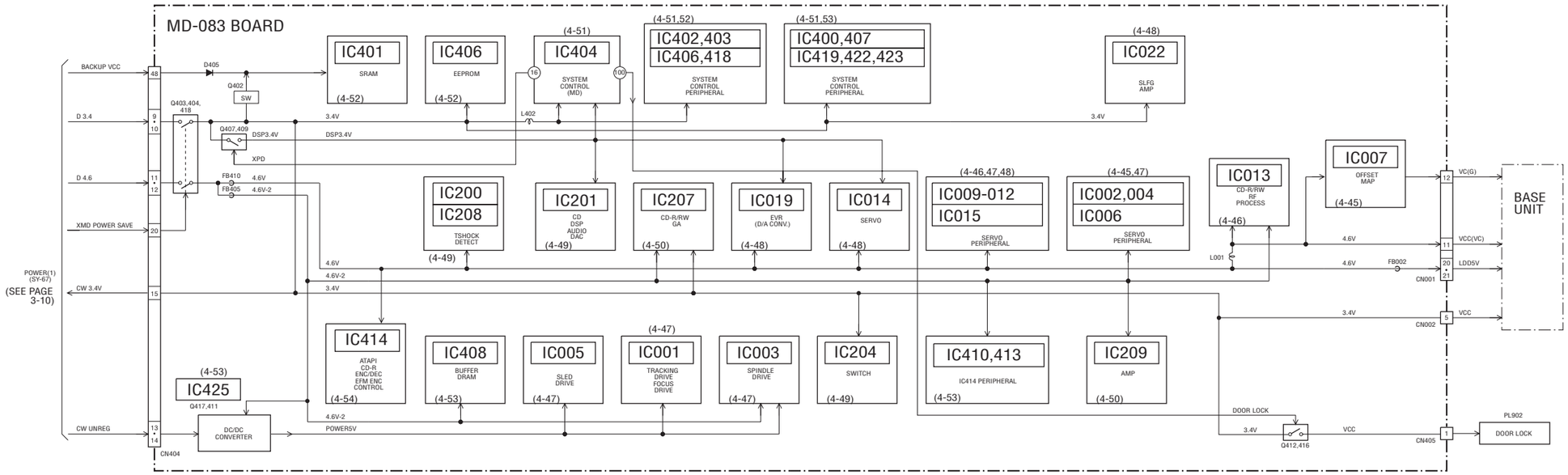
3-6. POWER BLOCK DIAGRAM (2/3)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



3-7. POWER BLOCK DIAGRAM (3/3)

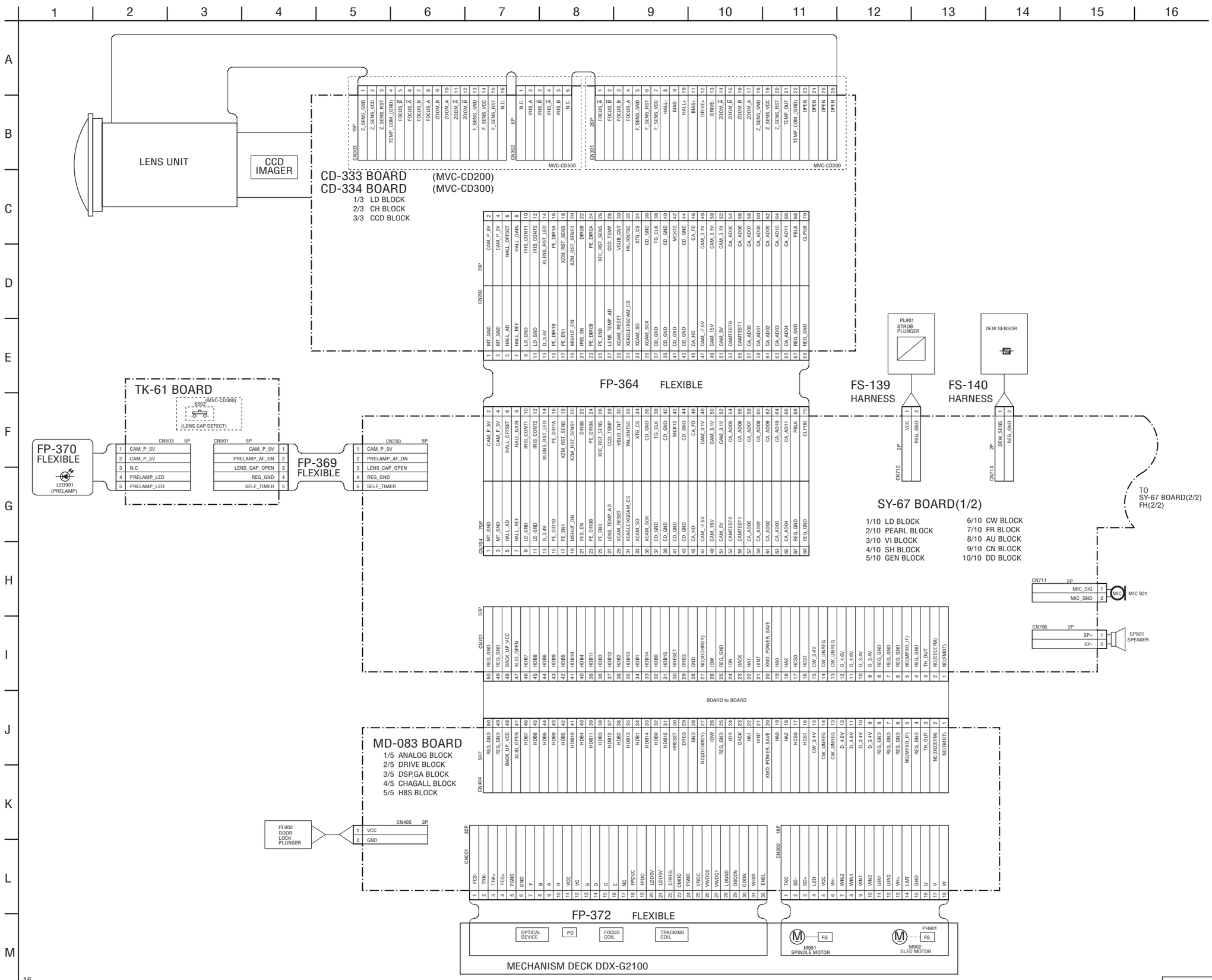
( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



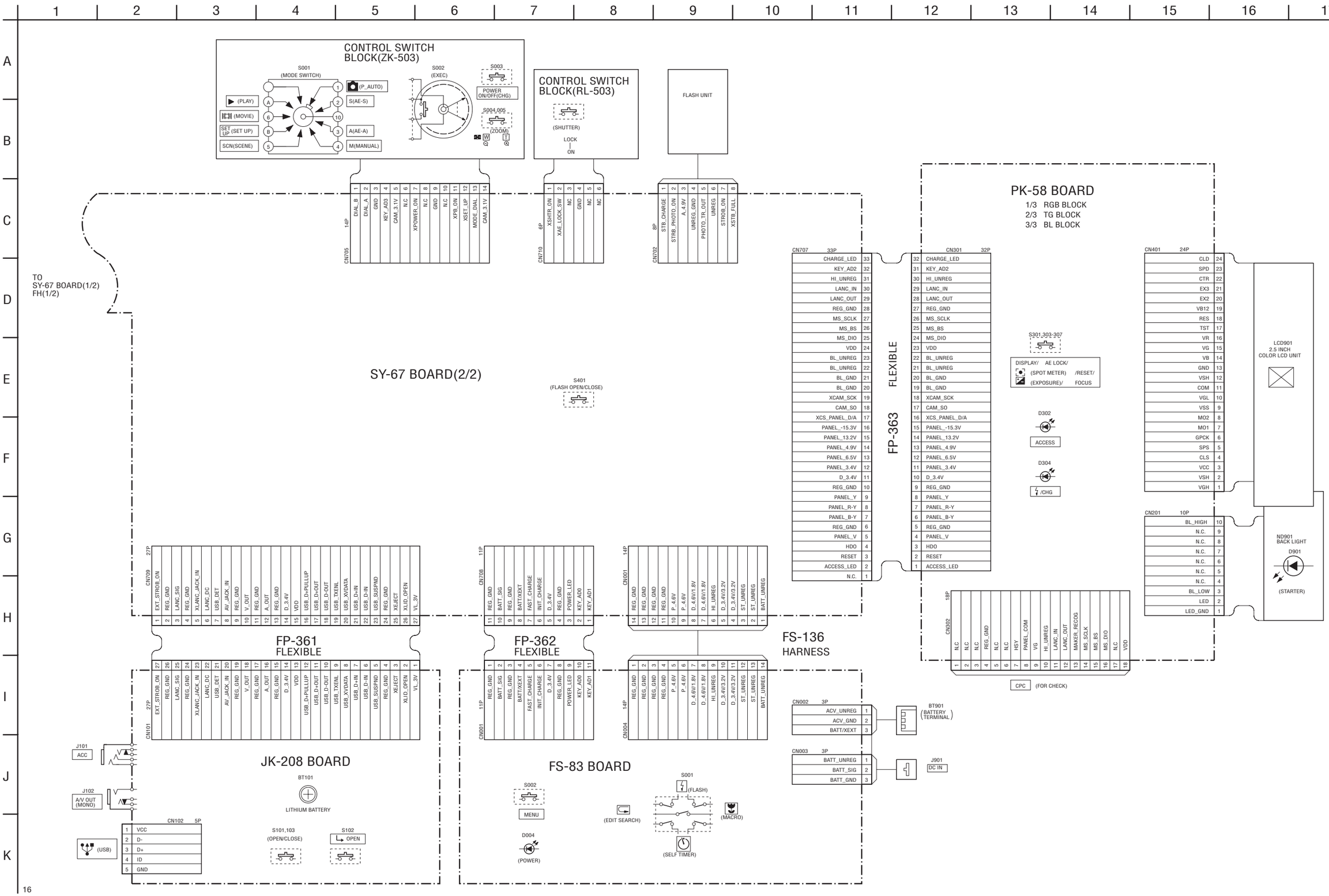
Camera block diagrams and MD block diagrams are not shown.
Pages from 3-15 to 3-26 are not shown.

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/2)



FRAME SCHEMATIC DIAGRAM (2/2)

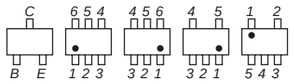


4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

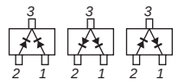
THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)
- ▒▒▒▒: Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.

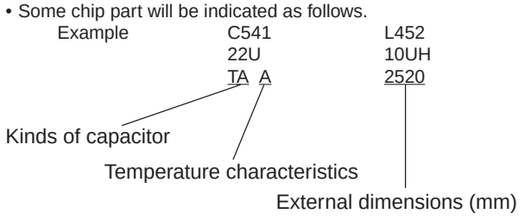
Transistor



Diode



(For schematic diagrams)
- All capacitors are in μF unless otherwise noted. p: pF.
  50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted.
  kΩ=1000Ω, MΩ=1000kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.



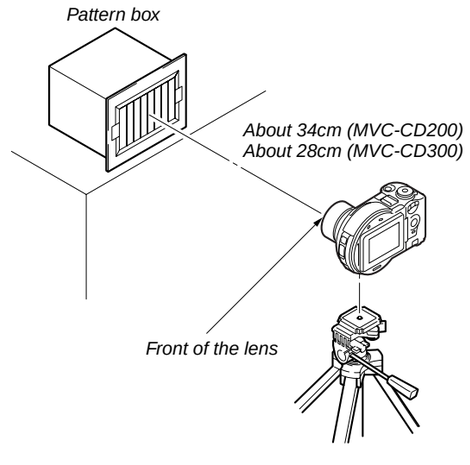
- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line *
- : B– Line *
- : IN/OUT direction of (+,–) B LINE. *
- : adjustment for repair. *
- Circled numbers refer to waveforms. *

* Indicated by the color red.

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(Measuring conditions voltage and waveform)
- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. *
  (VOM of DC 10 MΩ input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.) *

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

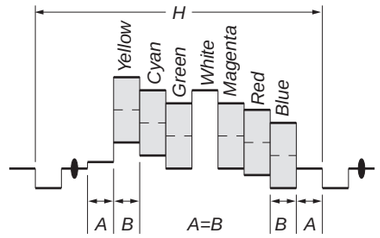


Fig. a (Video output terminal output waveform)

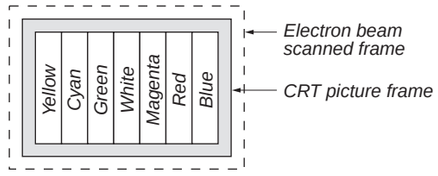


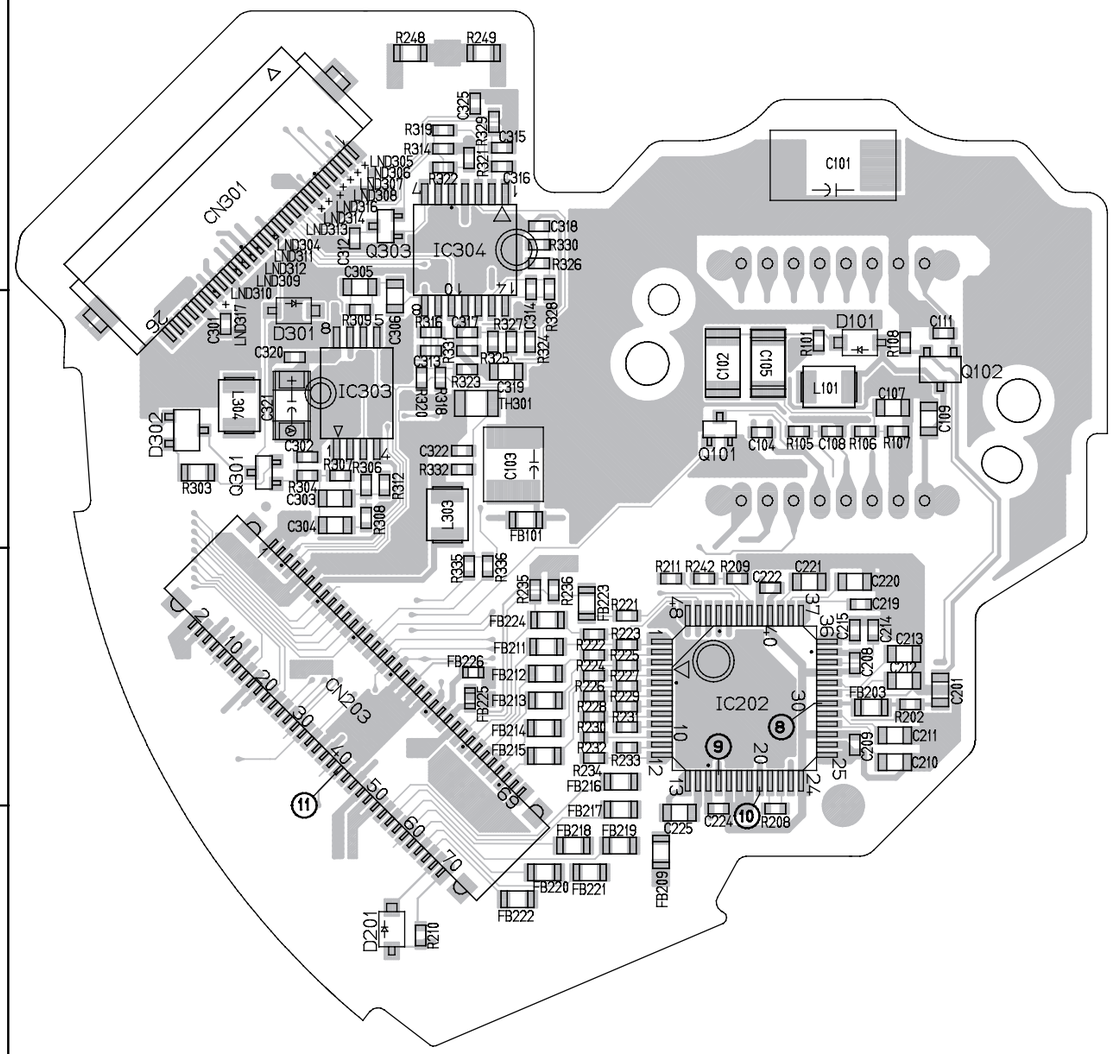
Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

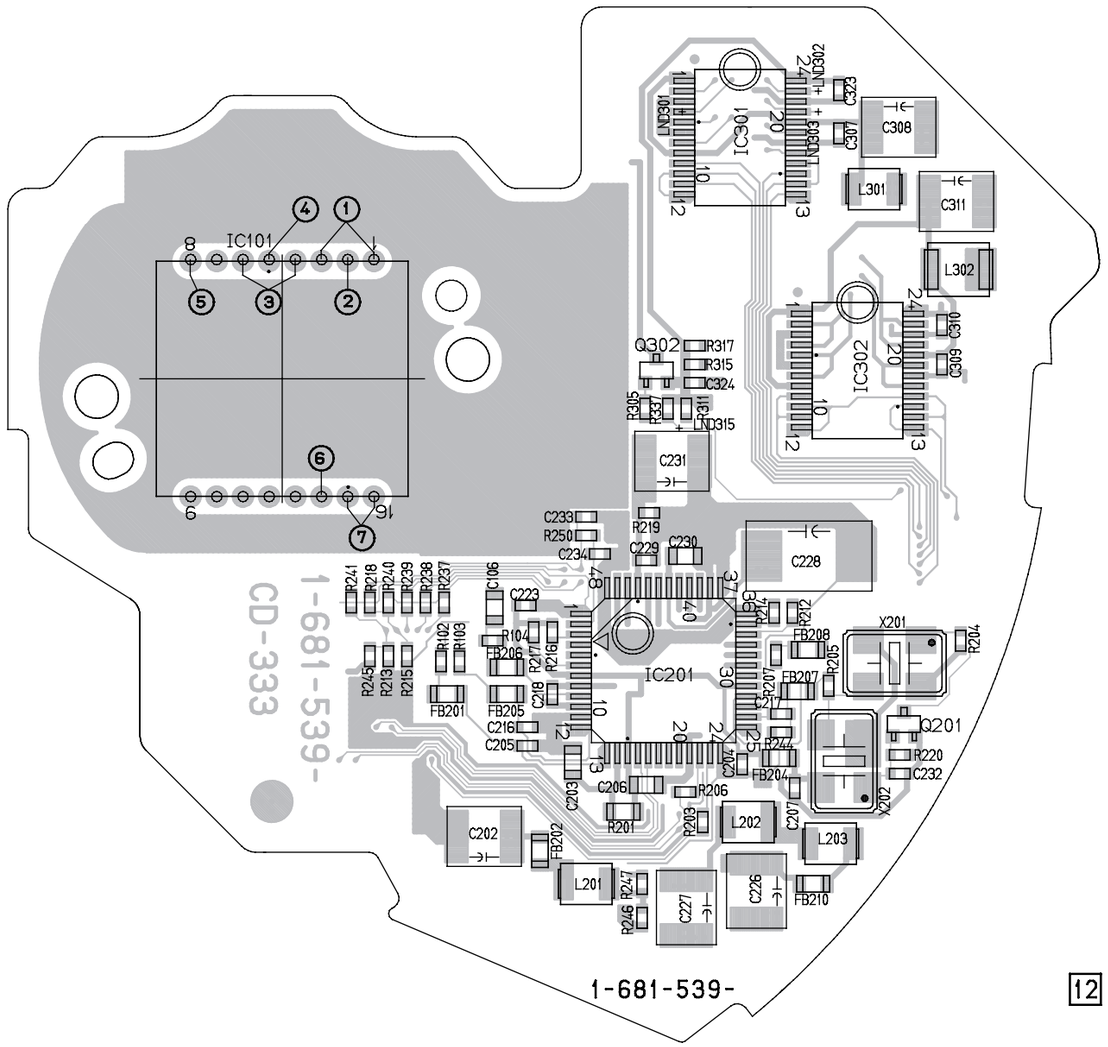
CD-333 (LENS DRIVE, CAMERA PROCESS, CCD IMAGER) PRINTED WIRING BOARD (CD200)

— Ref. No. CD-333 Board; 1,000 Series —

CD-333 BOARD(SIDE A)



CD-333 BOARD(SIDE B)



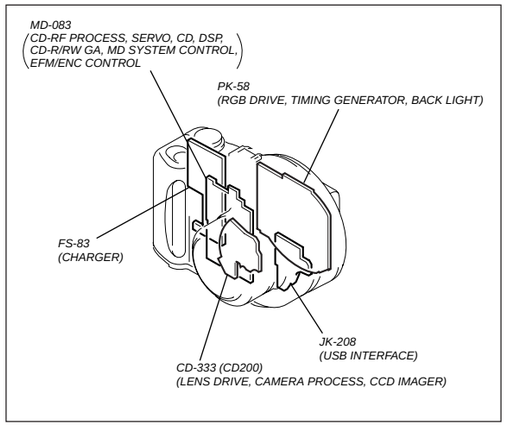
For printed wiring board

- Refer to page 4-78 for parts location.
- CD-333 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

Transistor

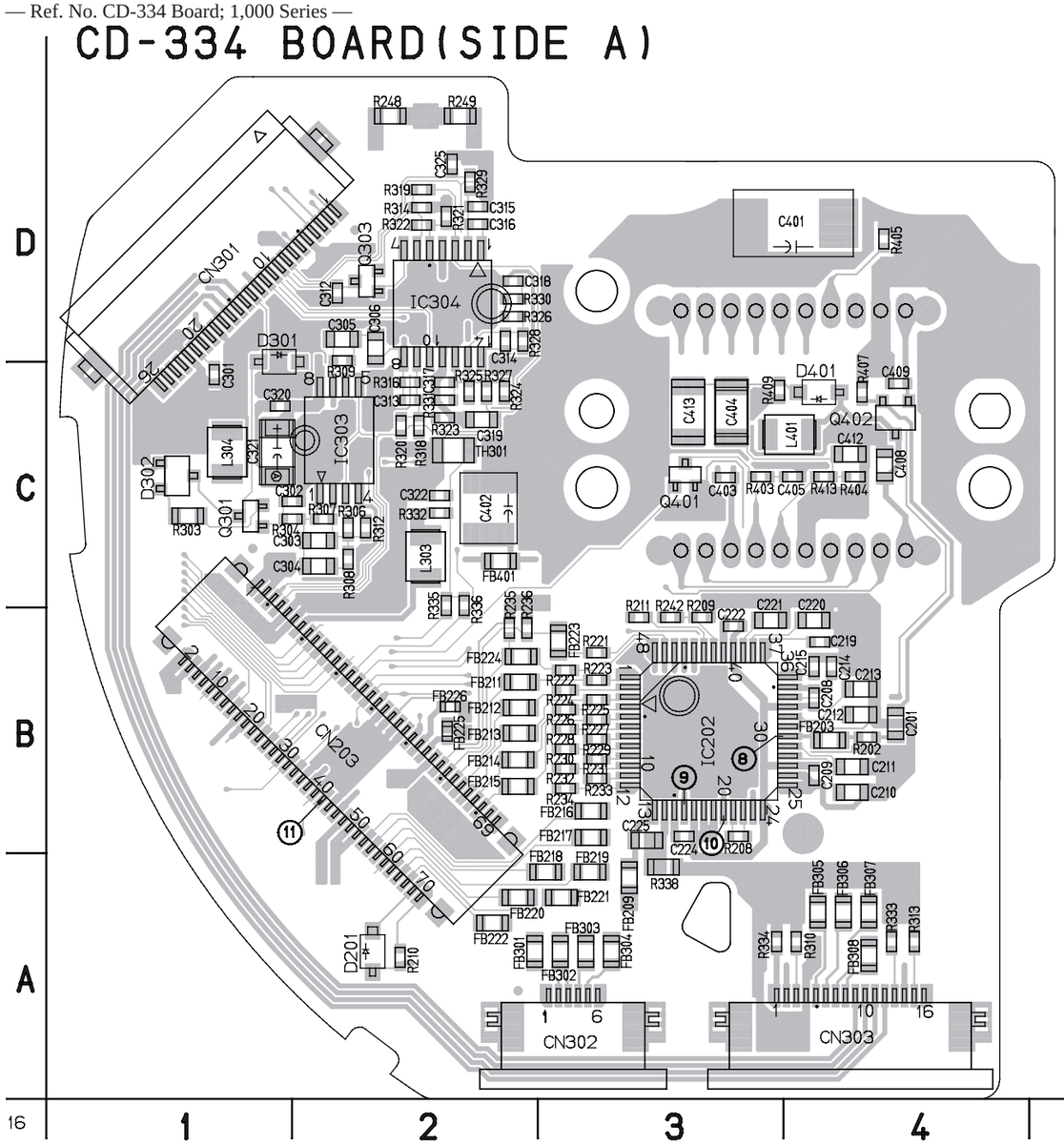
Diode

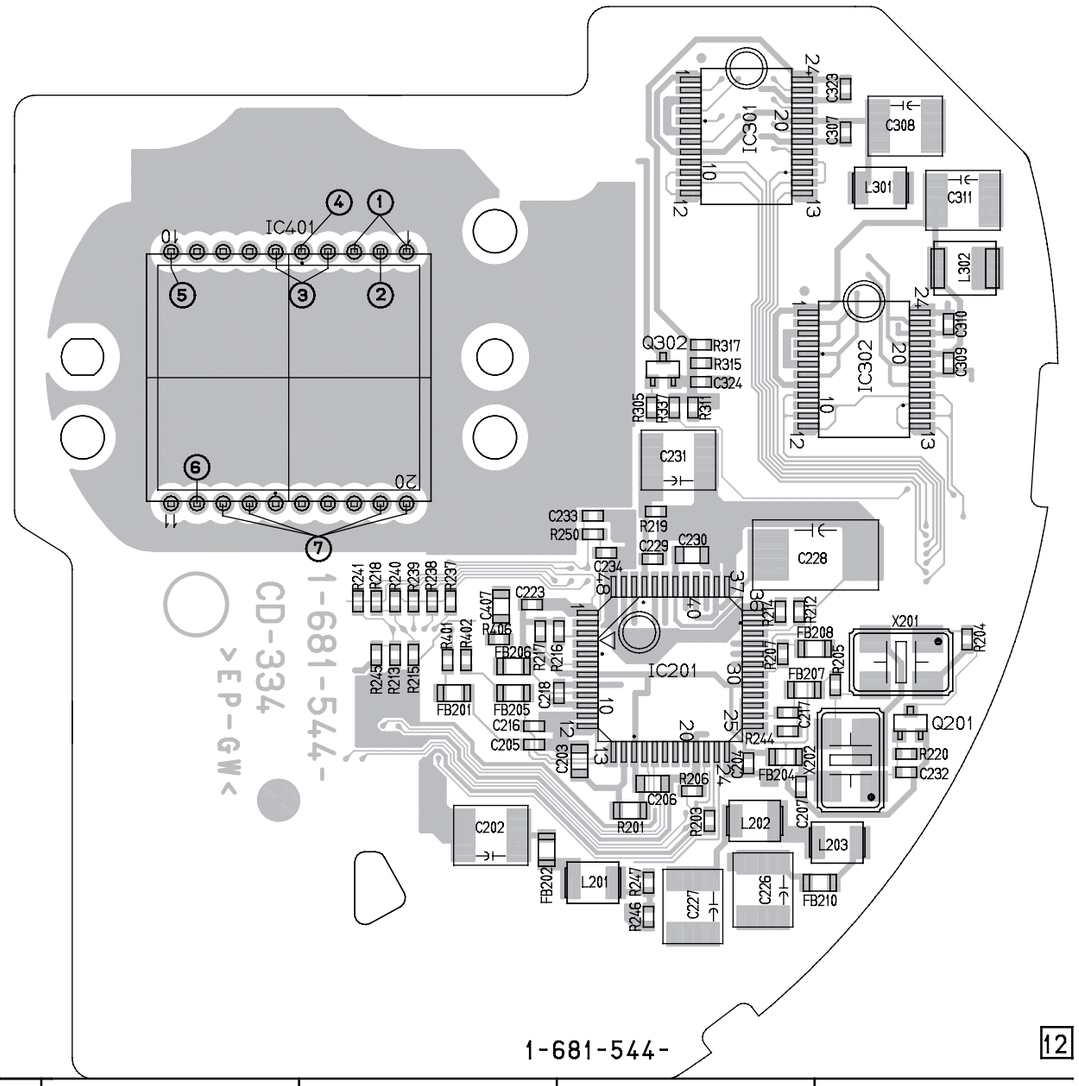
There are a few cases that the part printed on this diagram isn't mounted in this model.



CD-334 (LENS DRIVE, CAMERA PROCESS, CCD IMAGER) PRINTED WIRING BOARD (CD300)

— Ref. No. CD-334 Board; 1,000 Series —





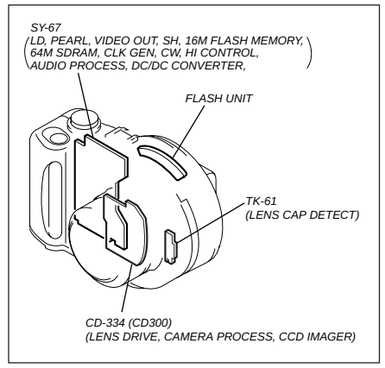
For printed wiring board

- Refer to page 4-78 for parts location.
- CD-334 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

Transistor

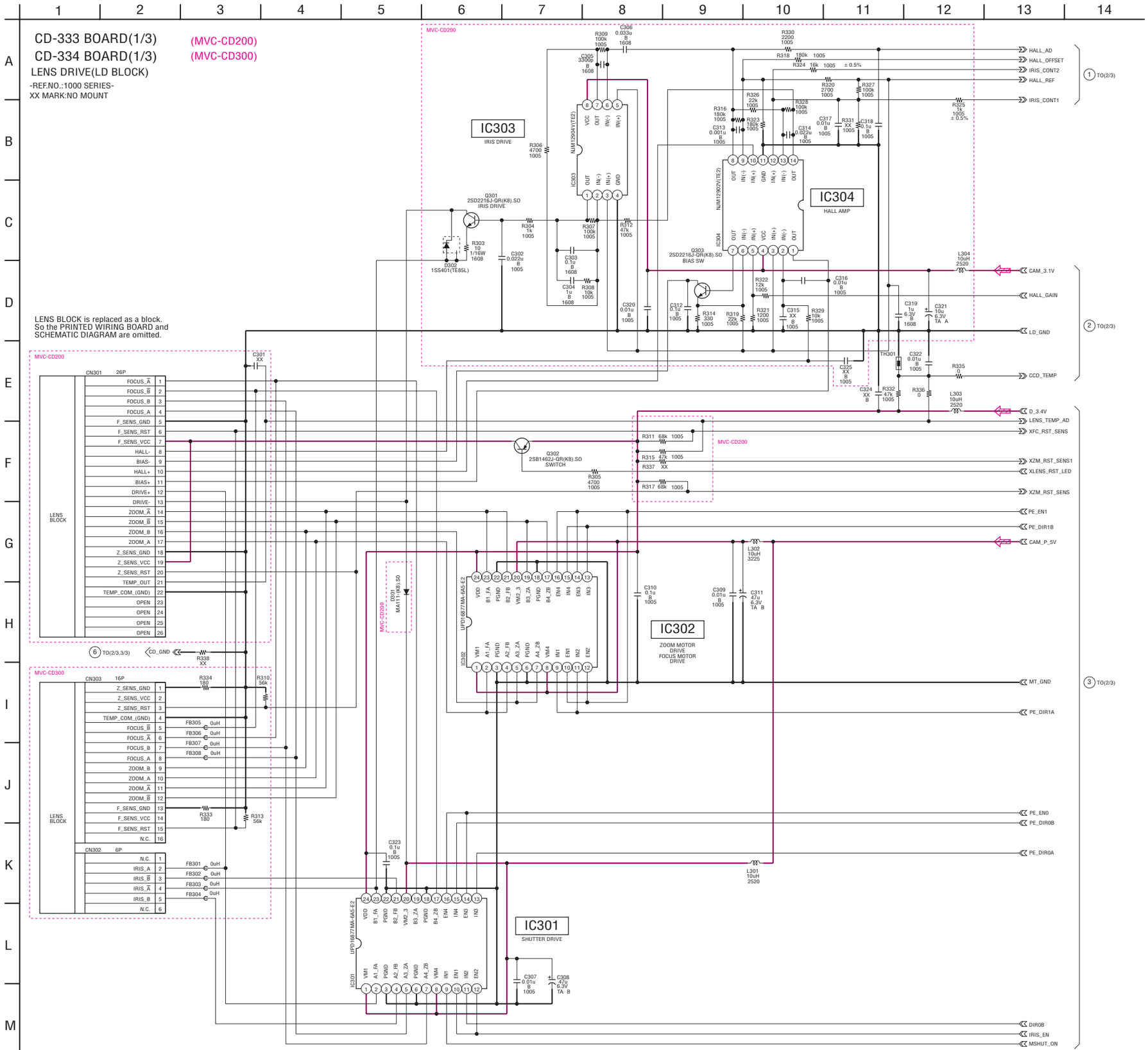
Diode

There are a few cases that the part printed on this diagram isn't mounted in this model.


SY-67
(LD, PEARL, VIDEO OUT, SH, 16M FLASH MEMORY, 64M SDRAM, CLK GEN, CW, HI CONTROL, AUDIO PROCESS, DC/DC CONVERTER,
FLASH UNIT
TK-61
(LENS CAP DETECT)
CD-334 (CD300)
(LENS DRIVE, CAMERA PROCESS, CCD IMAGER)

For Schematic Diagram

- Refer to page 4-7 for CD-333 printed wiring board.
- Refer to page 4-9 for CD-334 printed wiring board.



LENS DRIVE
CD-333 (1/3)/CD-334 (1/3)

For Schematic Diagram

- Refer to page 4-7 for CD-333 printed wiring board.
- Refer to page 4-9 for CD-334 printed wiring board.
- Refer to page 4-73 for waveforms.

CD-333 BOARD(2/3) (MVC-CD200)

CD-334 BOARD(2/3) (MVC-CD300)

NO MARK:STILL/PB MODE
S :STILL MODE
P :PB MODE

CAMERA PROCESS(CH BLOCK)

-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT

TO SY-67 BOARD(1/10) CN704
(THROUGH THE FP-364 FLEXIBLE)
(SEE PAGE 4-23)

CN203 70P

IC202 S/H,AGC,A/D CONVERTER
IC202
AD80044JSTRL

IC201 TIMING GENERATOR
IC201

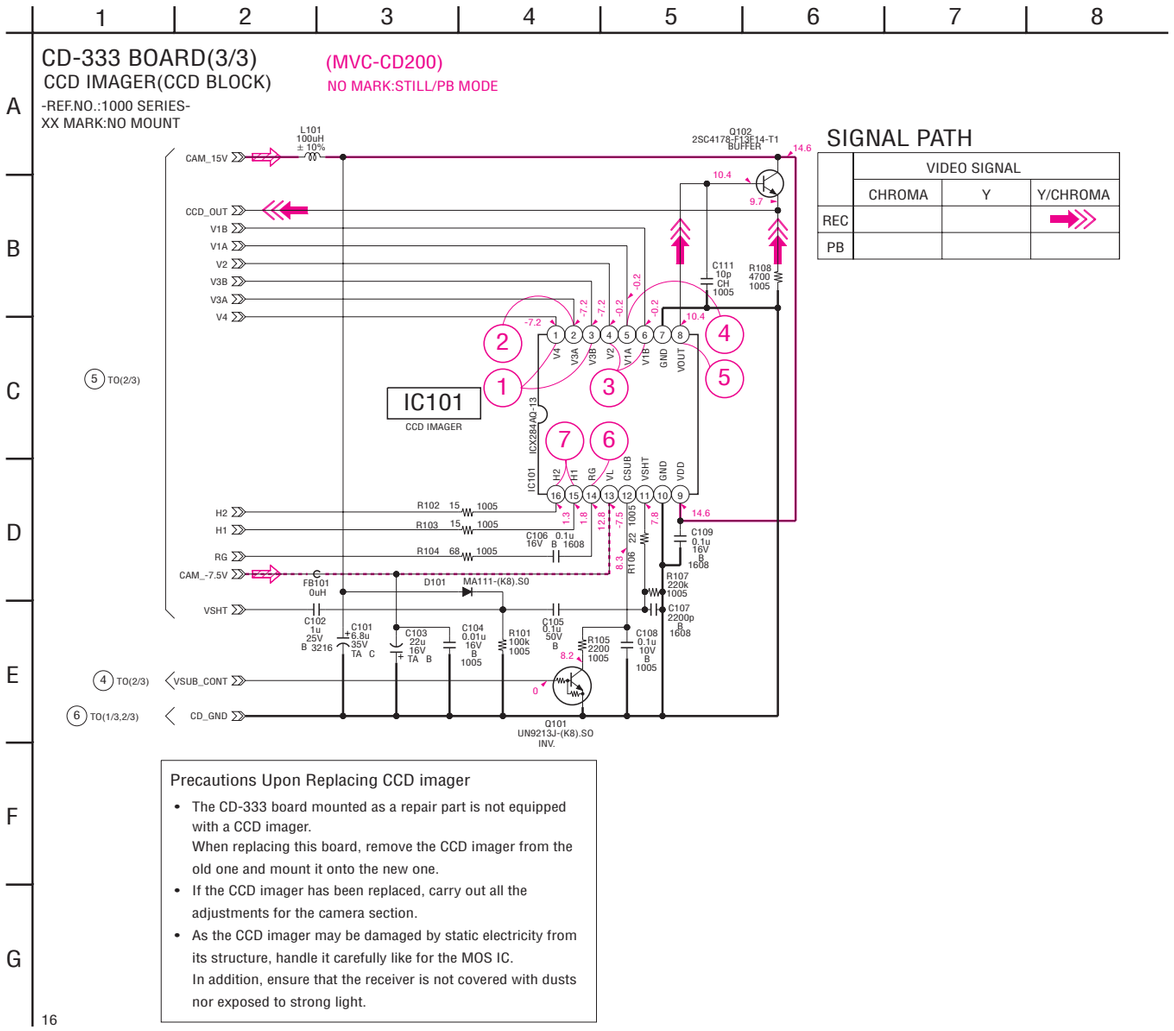
SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB			

*MARKED:MOUNT TABLE

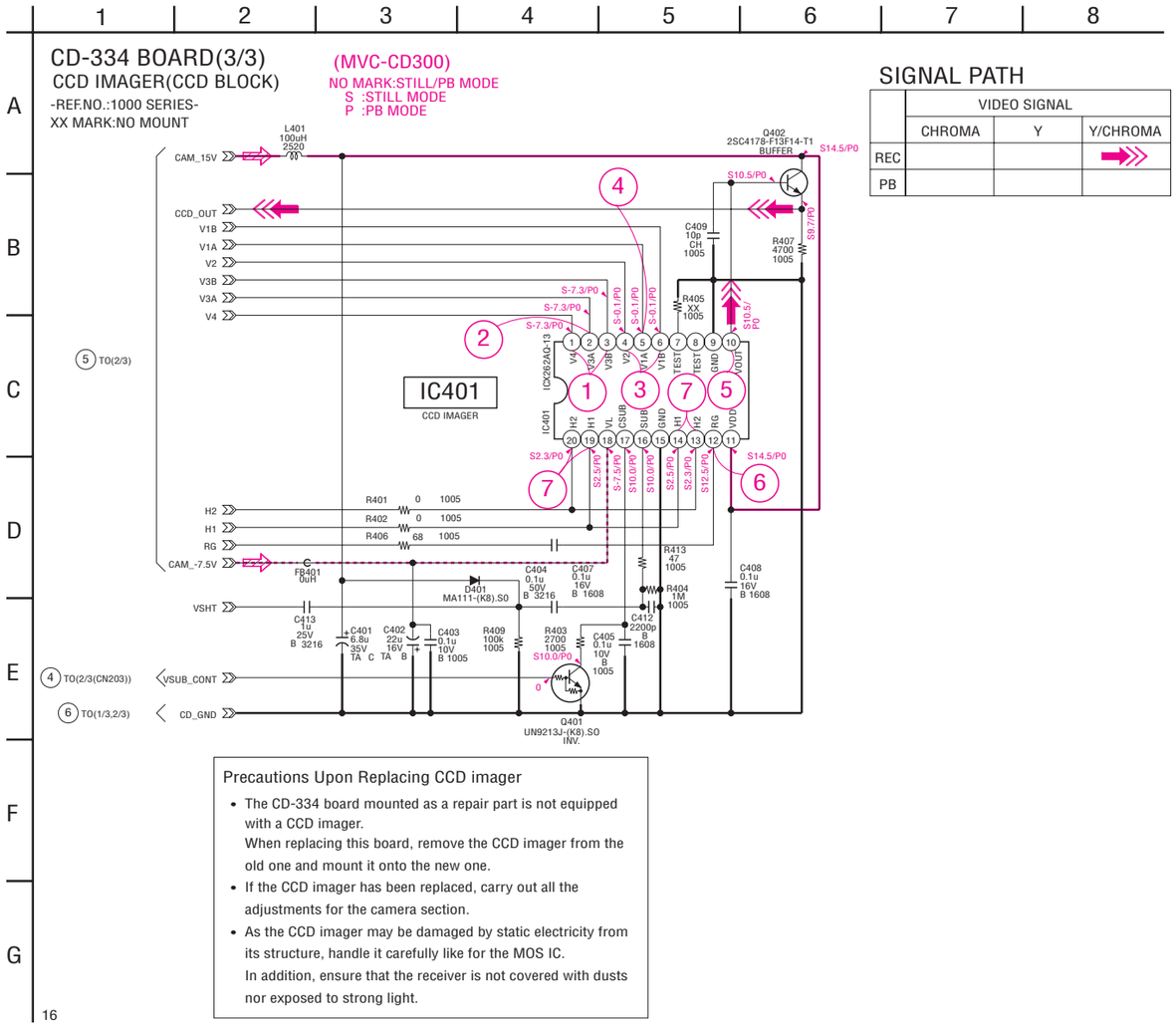
	MVC-CD200	MVC-CD300
C205	XX	120p 16V CH
C216	XX	120p 16V CH
FB201	0uH	10uH
FB202	XX	0uH
FB205	0uH	10uH
IC201	CXD2470R-T	CXD2497R-T
L201	XX	47uH
L203	10uH	47uH
R201	0	XX
R203	220	100
R216	0	XX
R217	0	XX
R207	0	XX
R246	XX	0
R247	0	XX

For Schematic Diagram
- Refer to page 4-7 for CD-333 printed wiring board.
- Refer to page 4-73 for waveforms.



Precautions Upon Replacing CCD imager
- The CD-333 board mounted as a repair part is not equipped with a CCD imager.
  When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

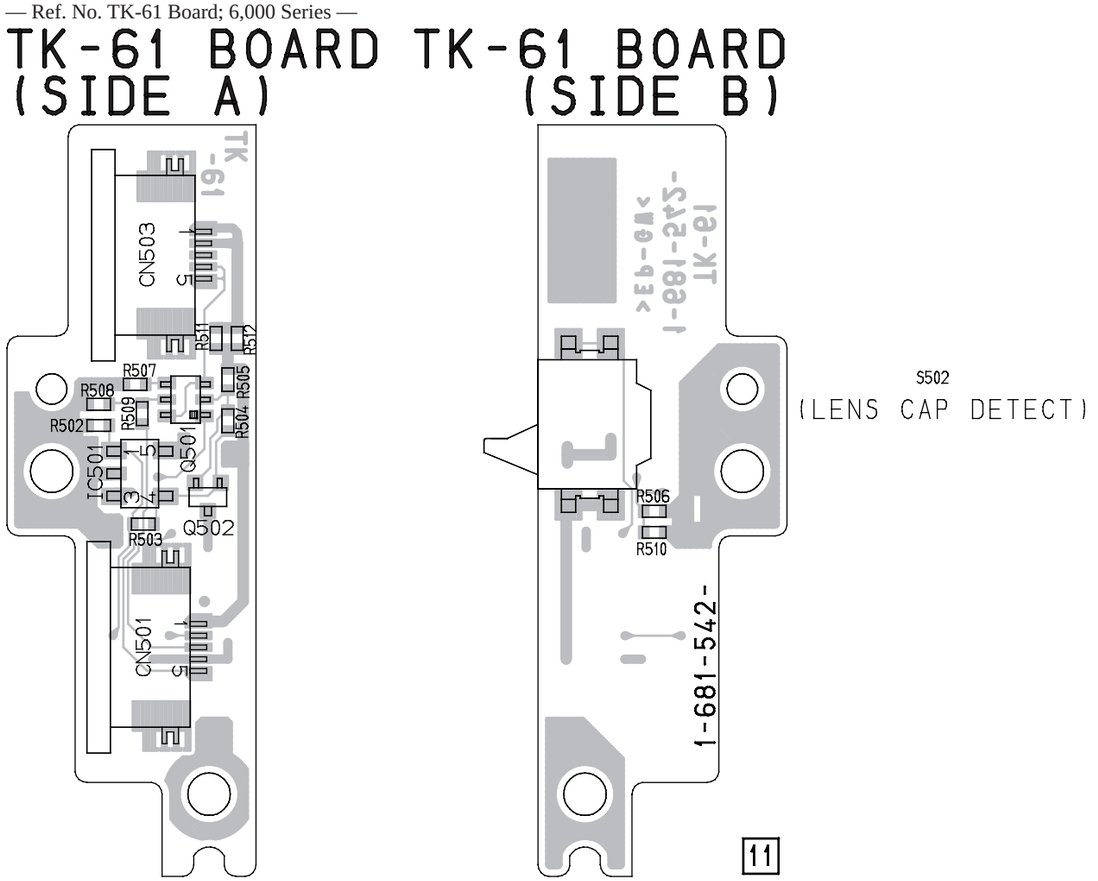
For Schematic Diagram
- Refer to page 4-9 for CD-334 printed wiring board.
- Refer to page 4-73 for waveforms.



Precautions Upon Replacing CCD imager
- The CD-334 board mounted as a repair part is not equipped with a CCD imager.
  When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

TK-61 (LENS CAP DETECT) PRINTED WIRING BOARD

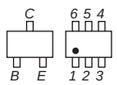
— Ref. No. TK-61 Board; 6,000 Series —



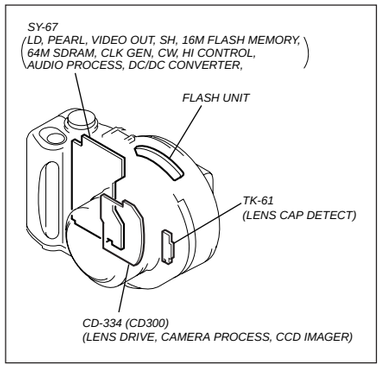
For printed wiring board

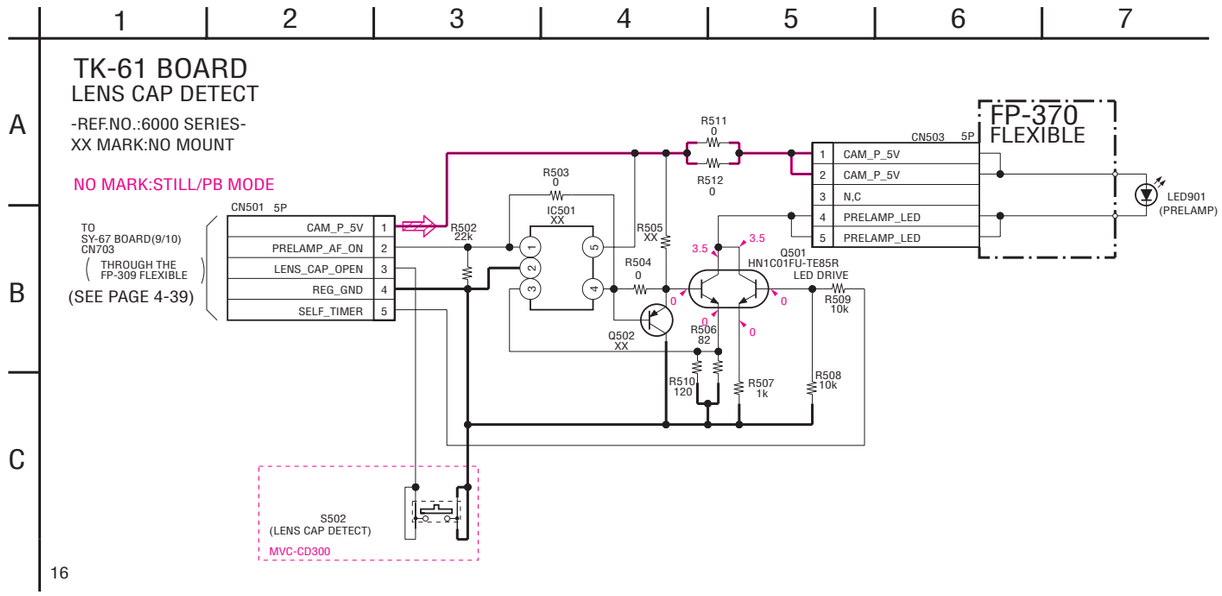
- TK-61 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

Transistor



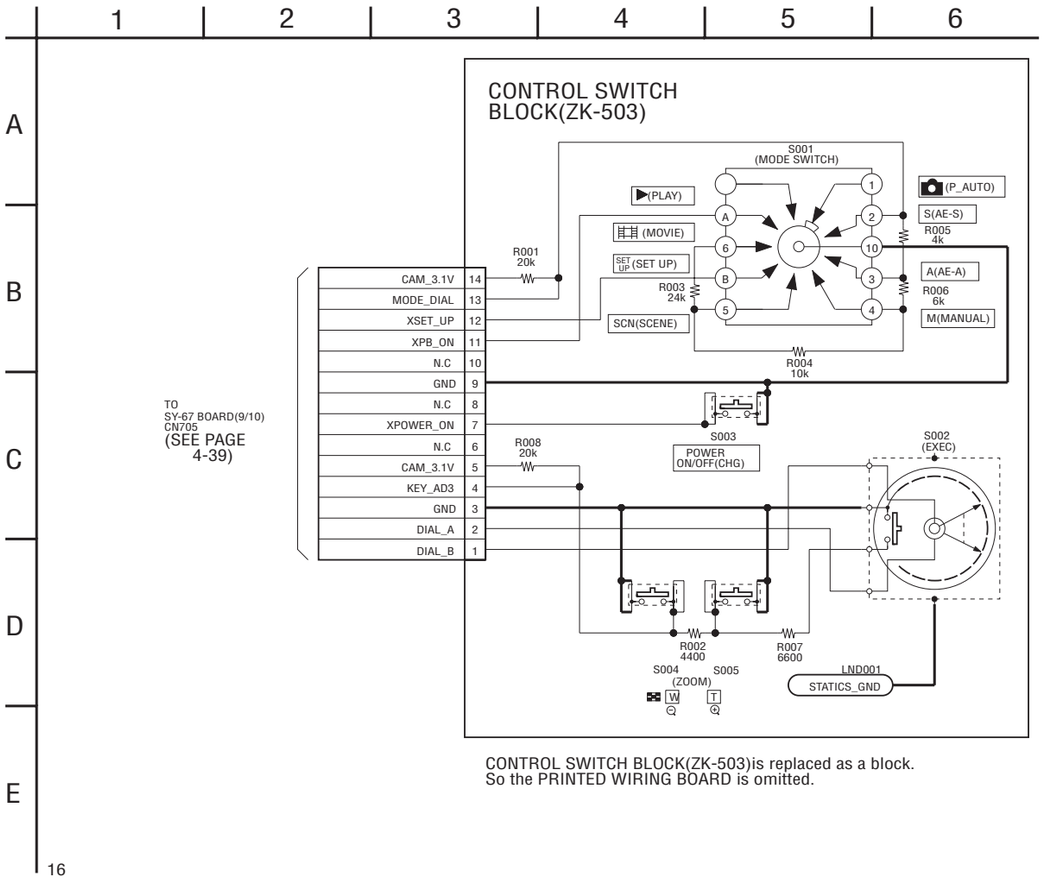
There are a few cases that the part printed on this diagram isn't mounted in this model.


SY-67
LD, PEARL, VIDEO OUT, SH, 16M FLASH MEMORY, 64M SDRAM, CLK GEN, CW, HI CONTROL, AUDIO PROCESS, DC/DC CONVERTER,
FLASH UNIT
TK-61
(LENS CAP DETECT)
CD-334 (CD300)
(LENS DRIVE, CAMERA PROCESS, CCD IMAGER)



16

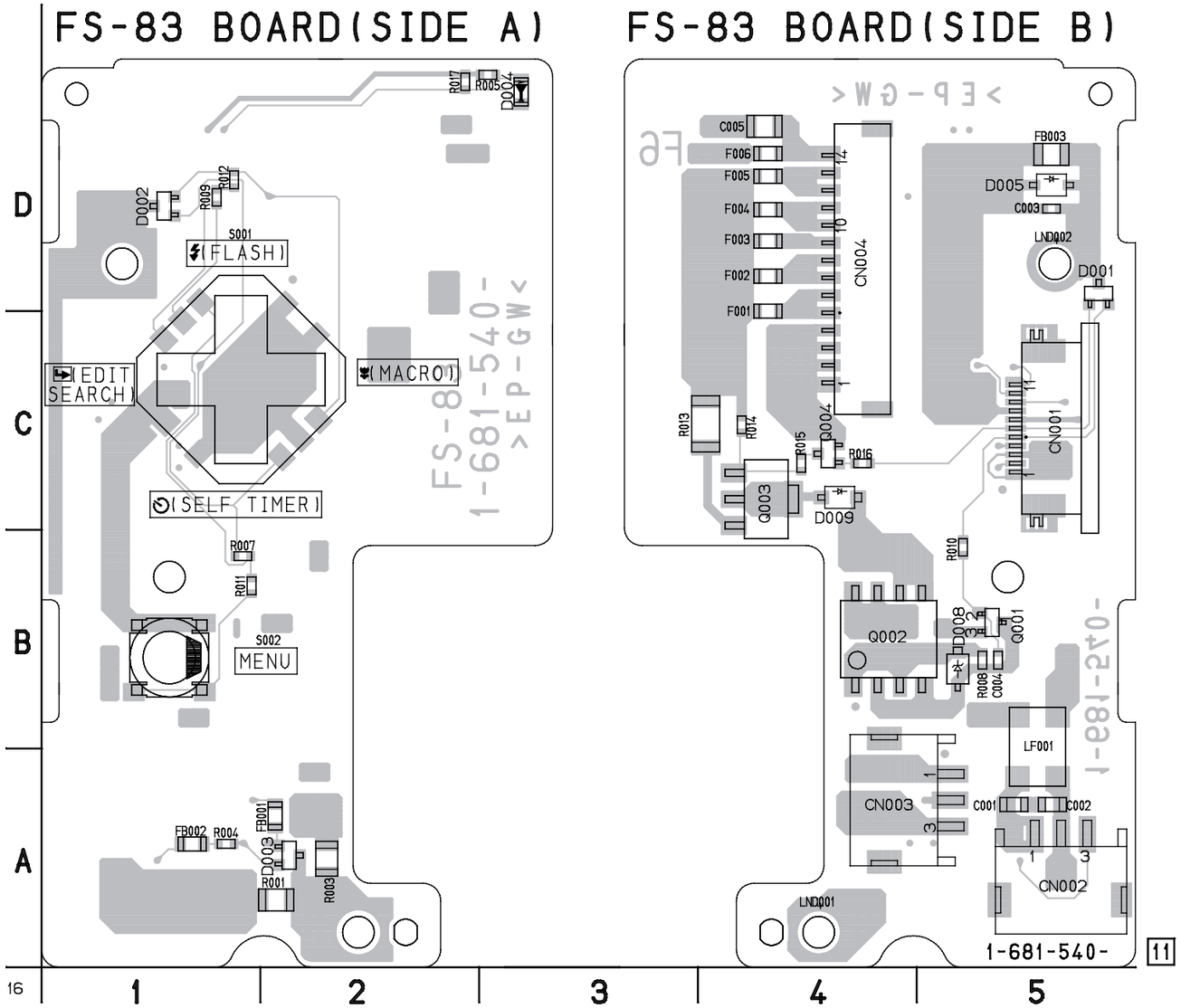
Schematic diagram and printed wiring board of the SY-67 and MD-083 boards are not shown.
Pages from 4-19 to 4-54 are not shown.



CONTROL SWITCH BLOCK(ZK-503)is replaced as a block.
So the PRINTED WIRING BOARD is omitted.

FS-83 (CHARGER) PRINTED WIRING BOARD

— Ref. No. FS-83 Board; 1,000 Series —



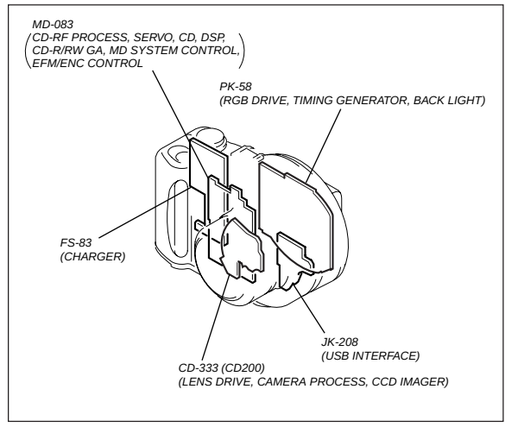
For printed wiring board

- Refer to page 4-79 for parts location.
- FS-83 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

Transistor

Diode

There are a few cases that the part printed on this diagram isn't mounted in this model.

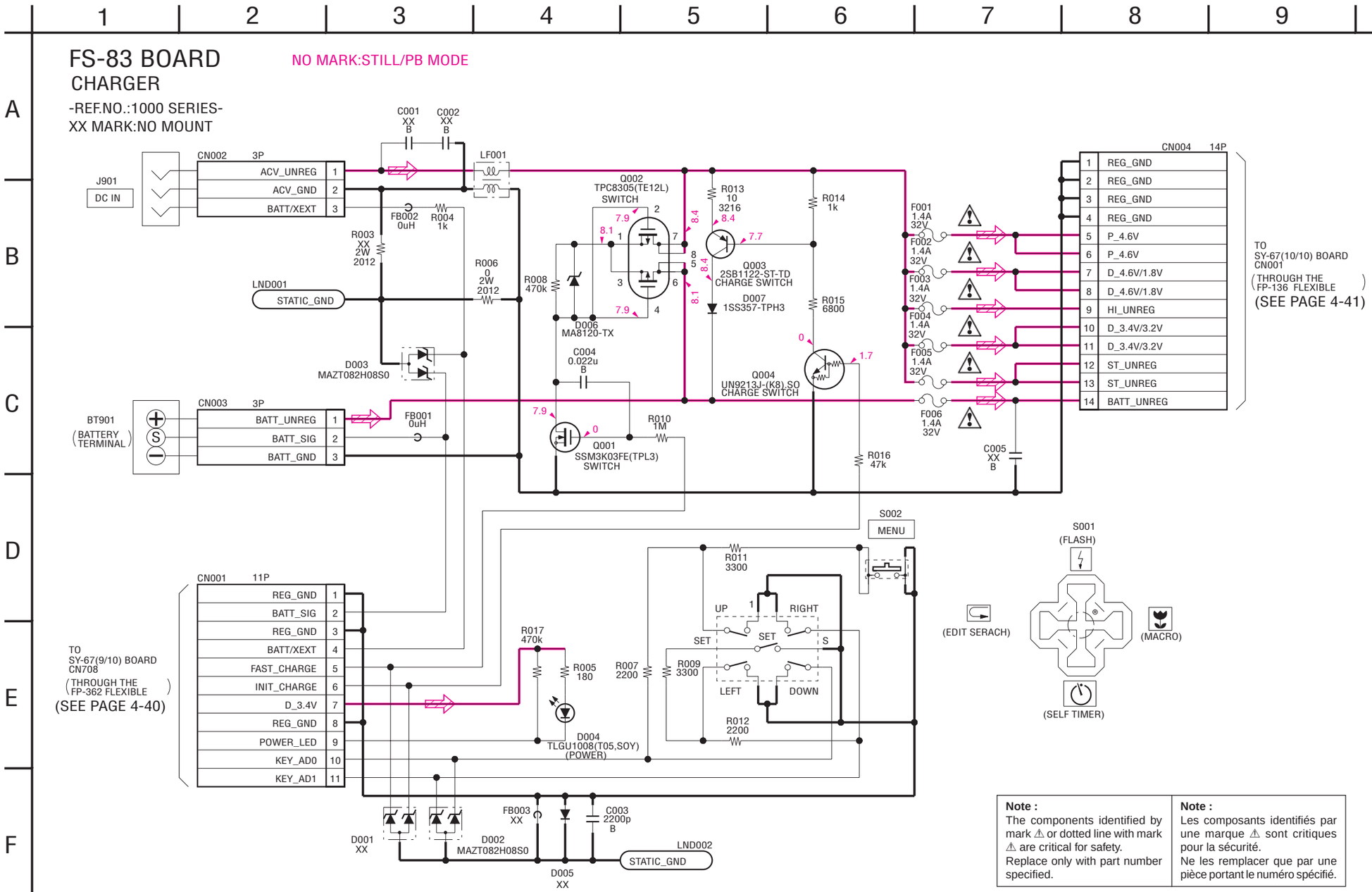


For Schematic Diagram
• Refer to page 4-56 for printed wiring board.

FS-83 BOARD
CHARGER

NO MARK:STILL/PB MODE

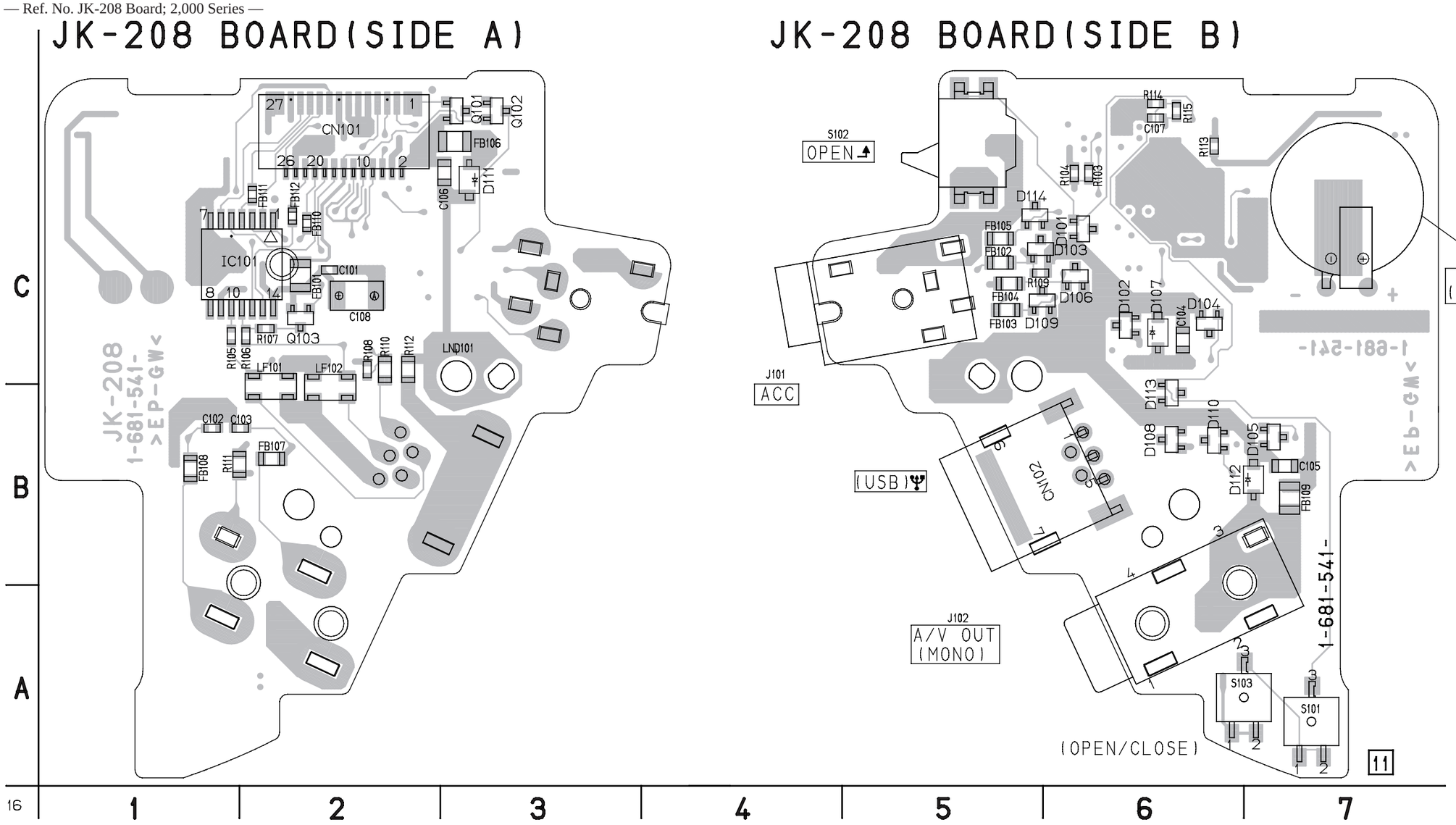
-REF.NO.:1000 SERIES-
XX MARK:NO MOUNT



Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

JK-208 (USB INTERFACE) PRINTED WIRING BOARD

— Ref. No. JK-208 Board; 2,000 Series —



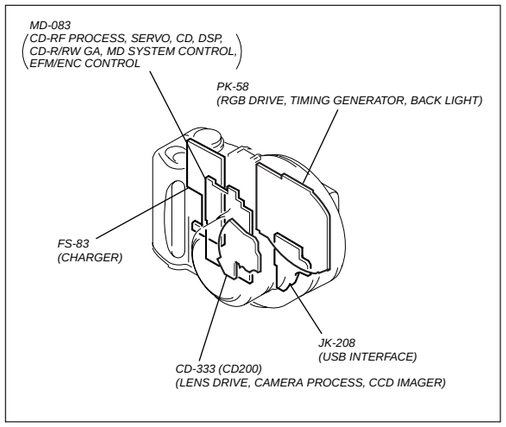
For printed wiring board

- Refer to page 4-79 for parts location.
- JK-208 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

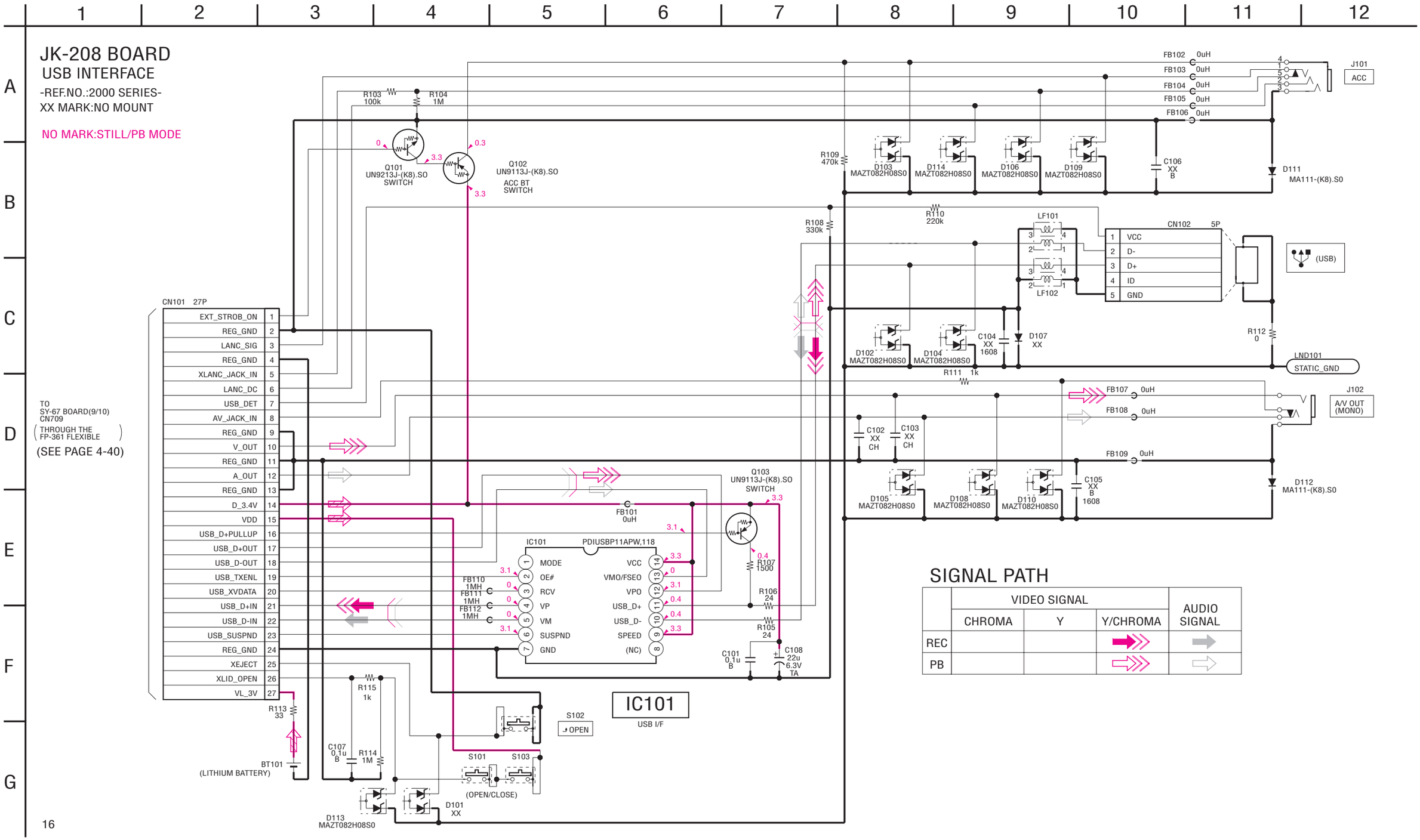
Transistor

Diode

There are a few cases that the part printed on this diagram isn't mounted in this model.



For Schematic Diagram
• Refer to page 4-59 for printed wiring board.

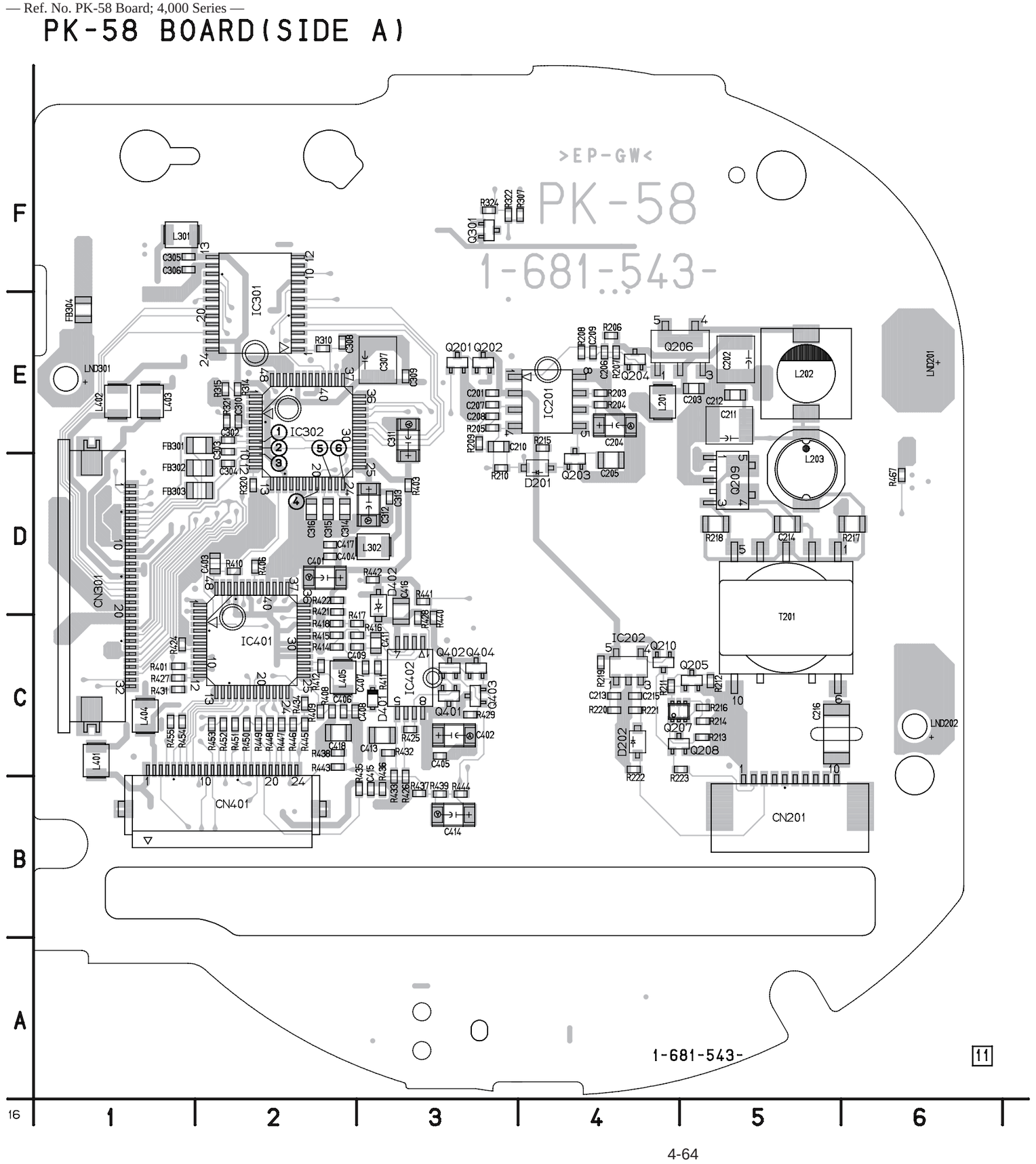


SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

PK-58 (RGB DRIVE, TIMING GENERATOR, BACK LIGHT) PRINTED WIRING BOARD

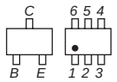
— Ref. No. PK-58 Board; 4,000 Series —



For printed wiring board

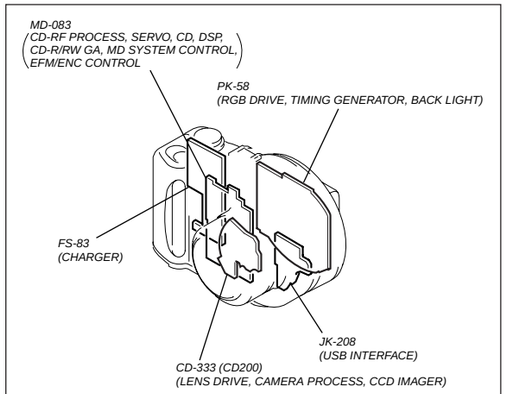
- Refer to page 4-79 for parts location.
- PK-58 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

Transistor



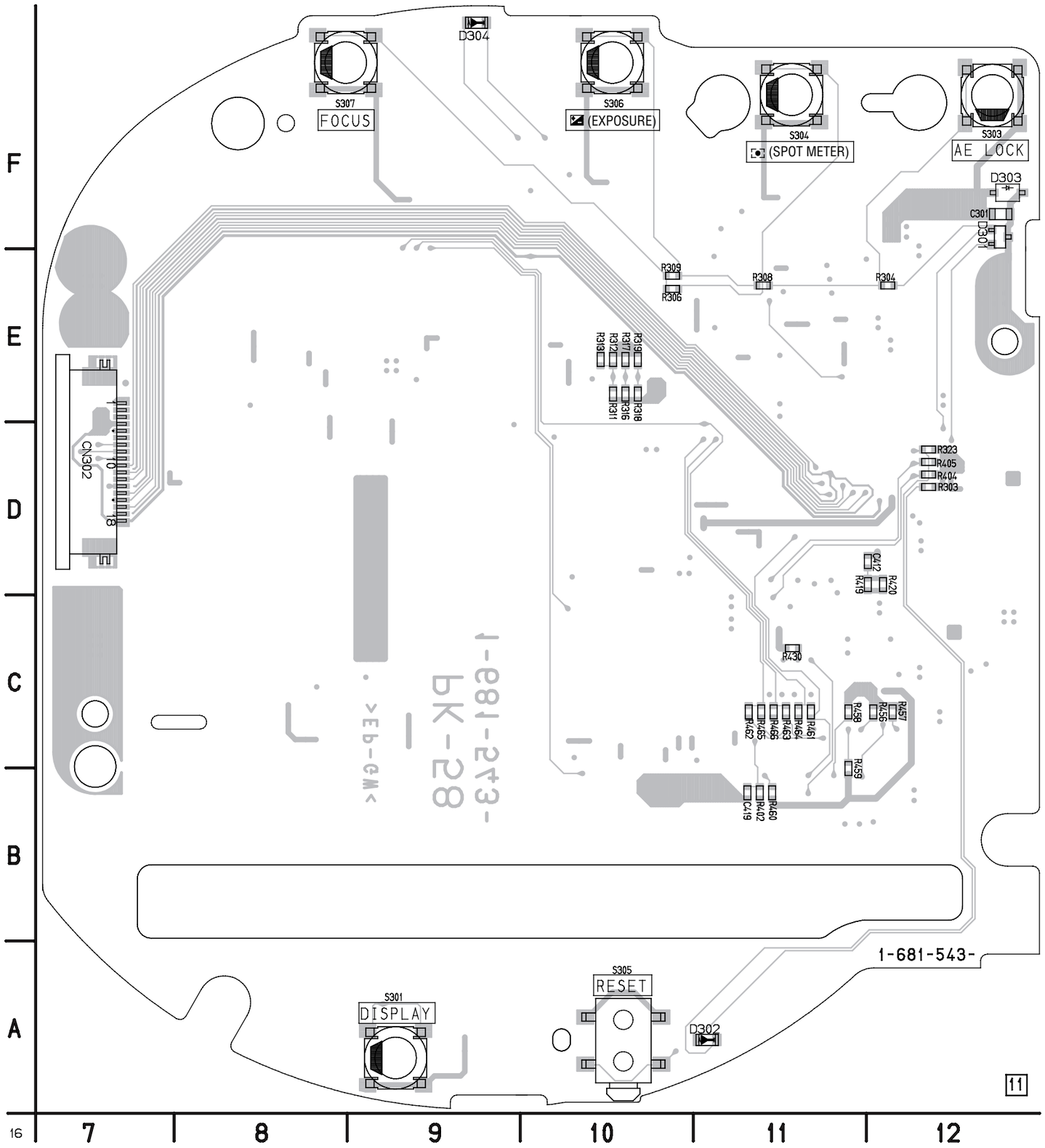
Diode

There are a few cases that the part printed on this diagram isn't mounted in this model.



RGB DRIVE, TIMING GENERATOR, BACK LIGHT
PK-58

PK-58 BOARD(SIDE B)



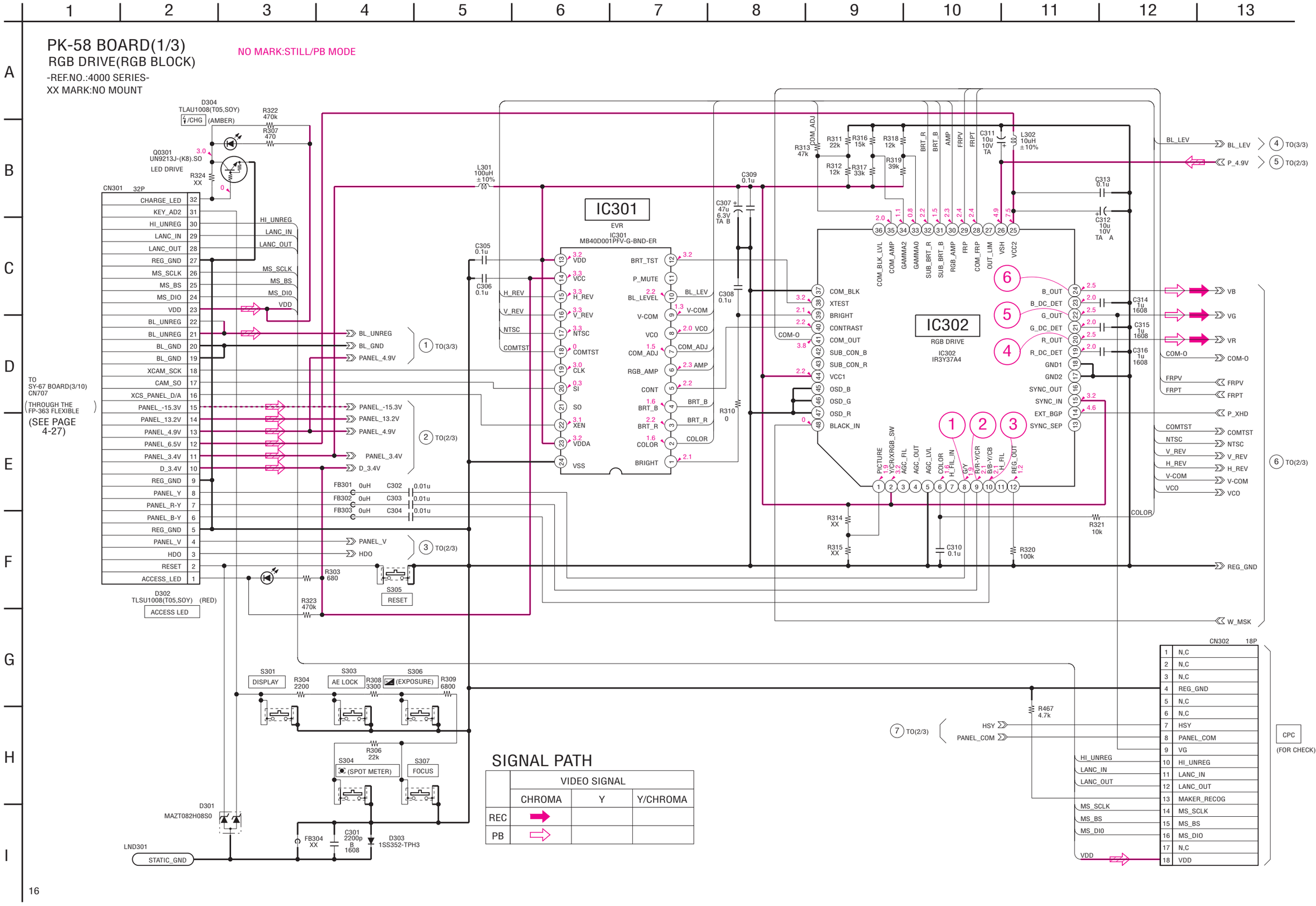
For Schematic Diagram
- Refer to page 4-63 for printed wiring board.
- Refer to page 4-74 for waveforms.

PK-58 BOARD(1/3)

RGB DRIVE(RGB BLOCK)

-REF.NO.:4000 SERIES-
XX MARK:NO MOUNT

NO MARK:STILL/PB MODE



SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

For Schematic Diagram
• Refer to page 4-63 for printed wiring board.

PK-58 BOARD(2/3)
TIMING GENERATOR(TG BLOCK)

-REF.NO.:4000 SERIES-
XX MARK:NO MOUNT

NO MARK:STILL/PB MODE
S :STILL MODE
P :PB MODE

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

IC402
IC402 NJM062V(TE2)
VCO
OUT1 VCC+ IN1- OUT2 IN2- IN1+ VCC- IN2+

Q401-Q404
COM DRIVE
Q401 2SD2216J-QR(K8).SO
Q402 2SB1462J-QR(K8).SO
Q403 2SD2216J-QR(K8).SO
Q404 2SB1462J-QR(K8).SO

IC401
TIMING GENERATOR
IC401
L29GH234

D401 1SV290(TPL3)
D402 MA8047-H-TX

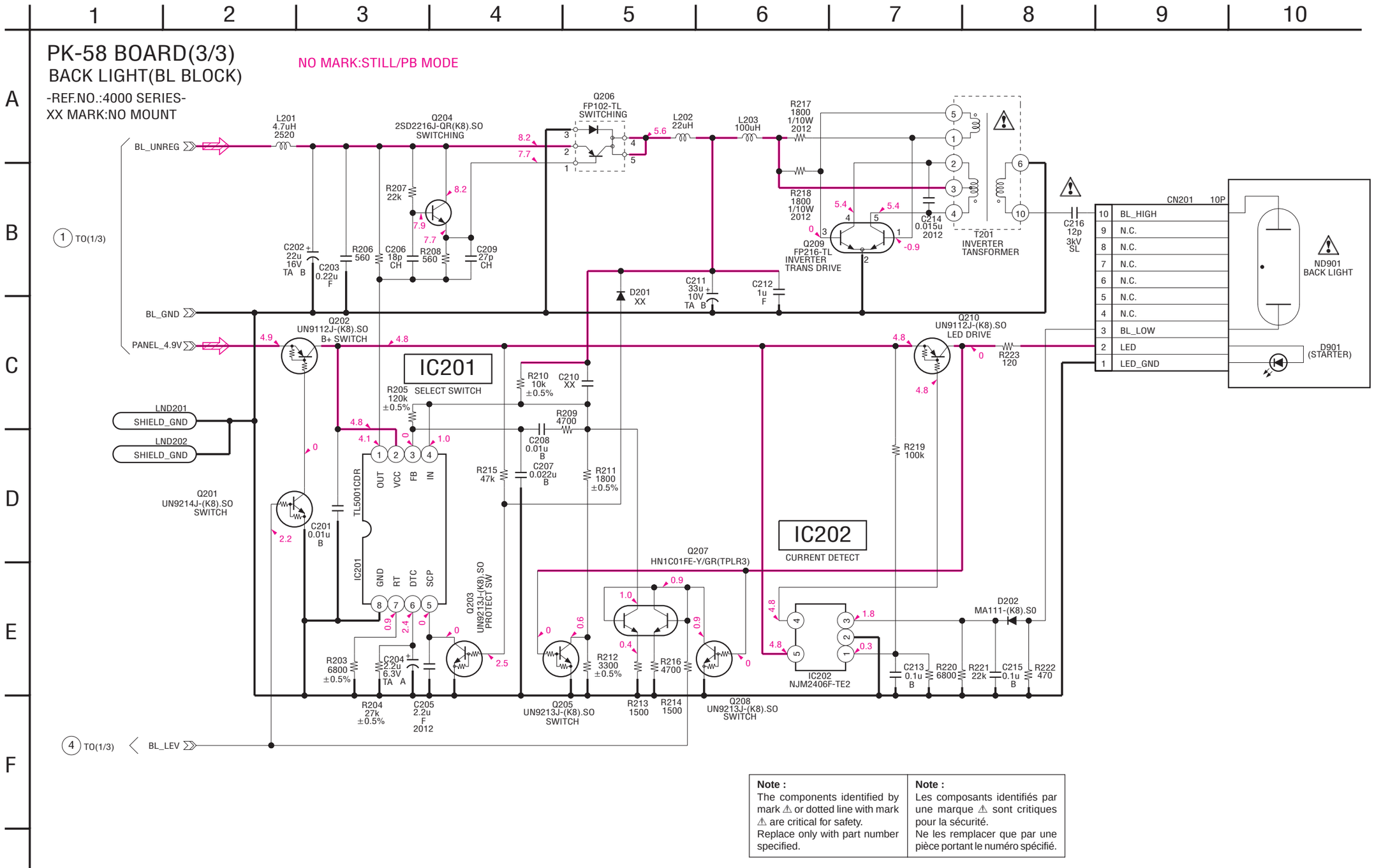
CN401 24P

24	CLD
23	SPD
22	CTR
21	EX3
20	EX2
19	VB12
18	RES
17	TST
16	VR
15	VG
14	VB
13	GND
12	VSH
11	COM
10	VGL
9	VSS
8	MO2
7	MO1
6	GPCK
5	SPS
4	CLS
3	VCC
2	VSH
1	VGH

LCD901
COLOR
LCD
UNIT
2.5INCH

For Schematic Diagram

• Refer to page 4-63 for printed wiring board.

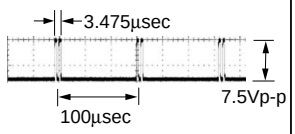


Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

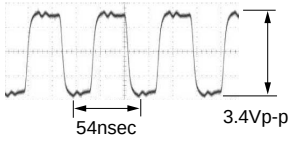
4-3. WAVEFORMS

CD-333 BOARD

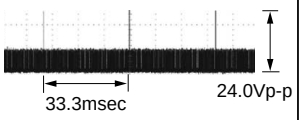
① IC101 ①,③



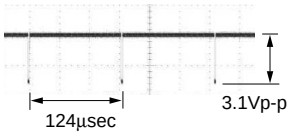
⑨ IC202 ⑯



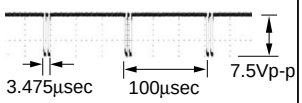
② IC101 ②



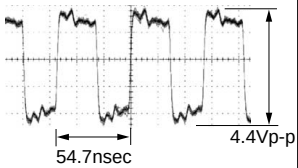
⑩ IC202 ⑳



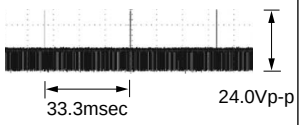
③ IC101 ④,⑥



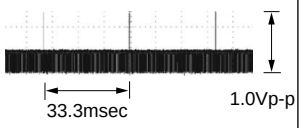
⑪ CN203 ㊷



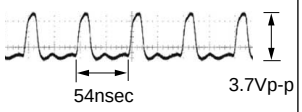
④ IC101 ⑤



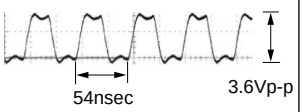
⑤ IC101 ⑧



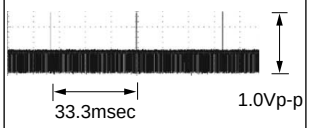
⑥ IC101 ⑭



⑦ IC101 ⑮,⑯

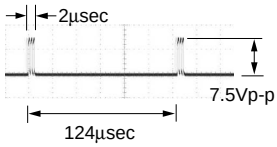


⑧ IC202 ㉚

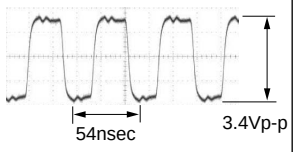


CD-334 BOARD

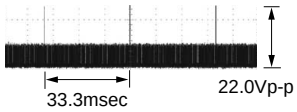
① IC401 ①,③



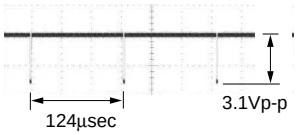
⑨ IC202 ⑯



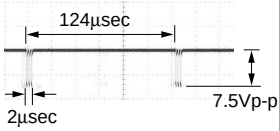
② IC401 ②



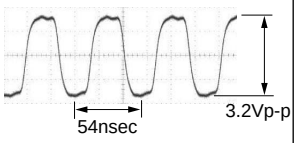
⑩ IC202 ⑳



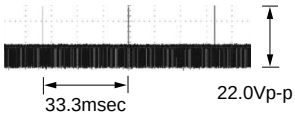
③ IC401 ④,⑥



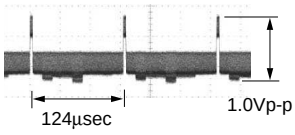
⑪ CN203 ㊷



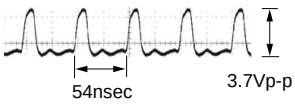
④ IC401 ⑤



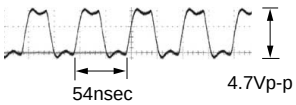
⑤ IC401 ⑩



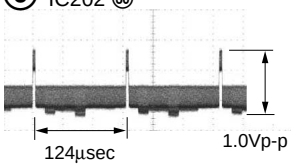
⑥ IC401 ⑫



⑦ IC401 ⑬,⑭,⑲,⑳

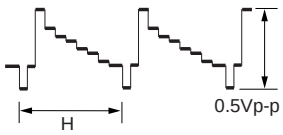


⑧ IC202 ㉚

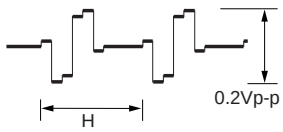


PK-58 BOARD

① IC302 ⑧

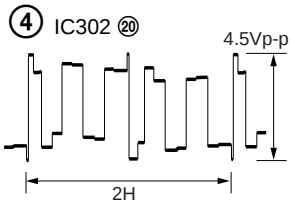


② IC302 ⑨

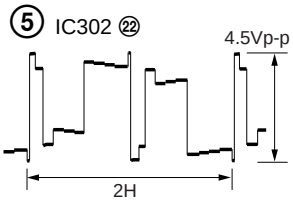


③ IC302 ⑩

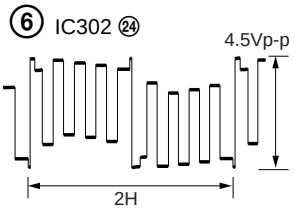
④ IC302 ⑳



⑤ IC302 ㉒



⑥ IC302 ㉔



Waveforms and parts location of the SY-67 and MD-083 boards are not shown.
Pages from 4-75 to 4-77 are not shown.

4-4. MOUNTED PARTS LOCATION

no mark : side A
* mark : side B

CD-333 BOARD

C101	D-4	FB101	C-2	* R219	C-8
C102	C-3	* FB201	B-7	* R220	B-9
C103	C-2	* FB202	A-7	R221	B-3
C104	C-3	FB203	B-4	R222	B-3
C105	C-3	* FB204	B-8	R223	B-3
* C106	B-7	* FB205	B-7	R224	B-3
C107	C-4	* FB206	B-7	R225	B-3
C108	C-4	* FB207	B-8	R226	B-3
C109	C-4	* FB208	B-8	R227	B-3
C111	C-4	FB209	A-3	R228	B-3
C201	B-4	* FB210	A-8	R229	B-3
* C202	A-7	FB211	B-3	R230	B-3
* C203	B-7	FB212	B-3	R231	B-3
* C204	B-8	FB213	B-3	R232	B-3
* C205	B-7	FB214	B-3	R233	B-3
* C206	B-8	FB215	B-3	R234	B-3
* C207	B-8	FB216	B-3	R235	B-3
C208	B-4	FB217	A-3	R236	B-3
C209	B-4	FB218	A-3	* R237	B-7
C210	B-4	FB219	A-3	* R238	B-7
C211	B-4	FB220	A-3	* R239	B-7
C212	B-4	FB221	A-3	* R240	B-7
C213	B-4	FB222	A-2	* R241	B-7
C214	B-4	FB223	B-3	R242	B-3
C215	B-4	FB224	B-3	* R244	B-8
* C216	B-7	FB225	B-2	* R245	B-7
* C217	B-8	FB226	B-2	* R246	A-8
* C218	B-7			* R247	A-8
C219	B-4	* IC101	C-6	R248	D-2
C220	B-4	* IC201	B-8	R249	D-2
C221	B-4	IC202	B-3	* R250	C-7
C222	B-3	* IC301	D-8	R303	C-1
* C223	B-7	* IC302	C-9	R304	C-2
C224	A-3	IC303	C-2	* R305	C-8
C225	A-3	IC304	D-2	R306	C-2
* C226	A-8			R307	C-2
* C227	A-8	L101	C-4	R308	C-2
* C228	B-8	* L201	A-7	R309	C-2
* C229	B-8	* L202	A-8	* R311	C-8
* C230	B-8	* L203	A-8	R312	C-2
* C231	C-8	* L301	D-9	R314	D-2
* C232	B-9	* L302	D-9	* R315	C-8
* C233	C-7	L303	C-2	R316	C-2
* C234	B-8	L304	C-1	* R317	C-8
C301	C-1			R318	C-2
C302	C-2	Q101	C-3	R319	D-2
C303	C-2	Q102	C-4	R320	C-2
C304	C-2	* Q201	B-9	R321	D-2
C305	D-2	Q301	C-1	R322	D-2
C306	C-2	* Q302	C-8	R323	C-2
* C307	D-8	Q303	D-2	R324	C-3
* C308	D-9			R325	C-2
* C309	C-9	R101	C-4	R326	D-3
* C310	C-9	* R102	B-7	R327	C-2
* C311	D-9	* R103	B-7	R328	C-3
C312	D-2	* R104	B-7	R329	D-2
C313	C-2	R105	C-4	R330	D-3
C314	C-3	R106	C-4	R331	C-2
C315	D-2	R107	C-4	R332	C-2
C316	D-2	R108	C-4	R335	B-2
C317	C-2	* R201	A-8	R336	B-2
C318	D-3	R202	B-4	* R337	C-8
C319	C-2	* R203	A-8		
C320	C-2	* R204	B-9	TH301	C-2
C321	C-2	* R205	B-8		
C322	C-2	* R206	B-8	* X201	B-9
* C323	D-8	* R207	B-8	* X202	B-9
* C324	C-8	R209	B-3		
C325	D-2	R210	A-2		
		R211	B-3		
CN203	B-2	* R212	B-8		
CN301	D-1	* R213	B-7		
		* R214	B-8		
D101	C-4	* R215	B-7		
D201	A-2	* R216	B-7		
D301	C-2	* R217	B-7		
D302	C-1	* R218	B-7		

CD-334 BOARD

C201	B-4	FB203	B-4	R225	B-3
* C202	A-7	* FB204	B-8	R226	B-3
* C203	B-8	* FB205	B-7	R227	B-3
* C204	B-8	* FB206	B-7	R228	B-3
* C205	B-7	* FB207	B-8	R229	B-3
* C206	B-8	* FB208	B-8	R230	B-3
* C207	B-8	FB209	A-3	R231	B-3
C208	B-4	* FB210	A-9	R232	B-3
C209	B-4	FB211	B-2	R233	B-3
C210	B-4	FB212	B-2	R234	B-3
C211	B-4	FB213	B-2	R235	B-2
C212	B-4	FB214	B-2	R236	B-2
C213	B-4	FB215	B-2	* R237	B-7
C214	B-4	FB216	B-3	* R238	B-7
C215	B-4	FB217	B-3	* R239	B-7
* C216	B-7	FB218	A-3	* R240	B-7
* C217	B-8	FB219	A-3	* R241	B-7
* C218	B-7	FB220	A-2	R242	B-3
C219	B-4	FB221	A-3	* R244	B-8
C220	B-4	FB222	A-2	* R245	B-7
C221	B-3	FB223	B-3	* R246	A-8
C222	B-3	FB224	B-2	* R247	A-8
* C223	B-7	FB225	B-2	R248	D-2
C224	B-3	FB226	B-2	R249	D-2
C225	B-3	FB301	A-2	* R250	C-8
* C226	A-8	FB302	A-3	R303	C-1
* C227	A-8	FB303	A-3	R304	C-1
* C228	C-8	FB304	A-3	* R305	C-8
* C229	C-8	FB305	A-4	R306	C-2
* C230	C-8	FB306	A-4	R307	C-2
* C231	C-8	FB307	A-4	R308	C-2
* C232	B-9	FB308	A-4	R309	C-2
* C233	C-8	FB401	C-2	R310	A-4
* C234	C-8			* R311	C-8
C301	C-1	* IC201	B-8	R312	C-2
C302	C-1	IC202	B-3	R313	A-4
C303	C-2	* IC301	D-8	R314	D-2
C304	C-2	* IC302	C-9	* R315	C-8
C305	D-2	IC303	C-2	R316	C-2
C306	D-2	IC304	D-2	* R317	C-8
* C307	D-9	* IC401	C-6	R318	C-2
* C308	D-9			R319	D-2
* C309	C-9	* L201	A-8	R320	C-2
* C310	C-9	* L202	B-8	R321	D-2
* C311	D-9	* L203	A-9	R322	D-2
C312	D-2	* L301	D-9	R323	C-2
C313	C-2	* L302	D-9	R324	C-2
C314	D-2	L303	C-2	R325	C-2
C315	D-2	L304	C-1	R326	D-2
C316	D-2	L401	C-4	R327	C-2
C317	C-2			R328	D-2
C318	D-2	* Q201	B-9	R329	D-2
C319	C-2	Q301	C-1	R330	D-2
C320	C-1	* Q302	C-8	R331	C-2
C321	C-1	Q303	D-2	R332	C-2
C322	C-2	Q401	C-3	R333	A-4
* C323	D-9	Q402	C-4	R334	A-3
* C324	C-8			R335	B-2
C325	D-2	* R201	B-8	R336	B-2
C401	D-4	R202	B-4	* R337	C-8
C402	C-2	* R203	B-8	R338	A-3
C403	C-3	* R204	B-9	* R401	B-7
C404	C-3	* R205	B-9	* R402	B-7
C405	C-4	* R206	B-8	R403	C-3
* C407	B-7	* R207	B-8	R404	C-4
C408	C-4	R208	B-3	R405	D-4
C409	C-4	R209	B-3	* R406	B-7
C412	C-4	R210	A-2	R407	C-4
C413	C-3	R211	B-3	R409	C-3
		* R212	B-8	R413	C-4
CN203	B-2	* R213	B-7		
CN301	D-1	* R214	B-8	TH301	C-2
CN302	A-3	* R215	B-7		
CN303	A-4	* R216	B-7	* X201	B-9
		* R217	B-7	* X202	B-9
D201	A-2	* R218	B-7		
D301	D-1	* R219	C-8		
D302	C-1	* R220	B-9		
D401	C-4	R221	B-3		
		R222	B-3		
* FB201	B-7	R223	B-3		
* FB202	A-7	R224	B-3		

no mark : side A
* mark : side B

FS-83 BOARD

*	C001	A-5
*	C002	A-5
*	C003	D-5
*	C004	B-5
*	C005	D-4
*	CN001	C-5
*	CN002	A-5
*	CN003	A-4
*	CN004	D-4
*	D001	D-5
	D002	D-1
	D003	A-2
	D004	D-3
*	D005	D-5
*	D008	B-5
*	D009	C-4
*	F001	C-4
*	F002	D-4
*	F003	D-4
*	F004	D-4
*	F005	D-4
*	F006	D-4
	FB001	A-2
	FB002	A-1
*	FB003	D-5
*	LF001	A-5
*	Q001	B-5
*	Q002	B-4
*	Q003	C-4
*	Q004	C-4
	R001	A-2
	R003	A-2
	R004	A-1
	R005	D-3
	R007	B-1
*	R008	B-5
	R009	D-1
*	R010	B-5
	R011	B-1
	R012	D-1
*	R013	C-4
*	R014	C-4
*	R015	C-4
*	R016	C-4
	R017	D-2
	S001	C-1
	S002	B-1

JK-208 BOARD

*	BT101	C-7
	C101	C-2
	C102	B-1
	C103	B-1
*	C104	C-6
*	C105	B-7
	C106	C-3
	C108	C-2
	CN101	C-2
*	CN102	B-5
*	D101	C-6
*	D102	C-6
*	D103	C-6
*	D104	C-6
*	D105	B-7
*	D106	C-6
*	D107	C-6
*	D108	B-6
*	D109	C-6
*	D110	B-6
	D111	C-3
*	D112	B-7
*	D113	B-6
*	D114	C-5
	FB101	C-2
*	FB102	C-5
*	FB103	C-5
*	FB104	C-5
*	FB105	C-5
	FB106	C-3
	FB107	B-2
	FB108	B-1
*	FB109	B-7
	FB110	C-2
	FB111	C-2
	FB112	C-2
	IC101	C-1
*	J101	C-5
*	J102	A-6
	LF101	C-2
	LF102	C-2
	Q101	C-3
	Q102	C-3
	Q103	C-2
*	R103	C-6
*	R104	C-6
	R105	C-1
	R106	C-2
	R107	C-2
	R108	C-2
*	R109	C-6
	R110	C-2
	R111	B-1
	R112	C-2
*	R113	C-6
*	R114	C-6
*	R115	C-6
*	S101	A-7
*	S102	C-5
*	S103	A-7

PK-58 BOARD

	C201	E-3
	C202	E-5
	C203	E-5
	C204	E-4
	C205	D-4
	C206	E-4
	C207	E-3
	C208	E-3
	C209	E-4
	C210	E-3
	C211	E-5
	C212	E-5
	C213	C-4
	C214	D-5
	C215	C-4
	C216	C-5
*	C301	F-12
	C302	E-2
	C303	E-2
	C304	D-2
	C305	F-1
	C306	F-1
	C307	E-3
	C308	E-2
	C309	E-3
	C310	E-2
	C311	E-3
	C312	D-3
	C313	D-3
	C314	D-2
	C315	D-2
	C316	D-2
	C401	D-2
	C402	C-3
	C403	D-2
	C404	D-2
	C405	C-3
	C406	C-2
	C407	C-3
	C408	C-3
	C409	C-3
	C411	C-3
*	C412	D-12
	C413	C-3
	C414	B-3
	C415	B-3
	C416	D-3
	C417	D-2
	C418	C-2
*	C419	B-11
	CN201	B-5
	CN301	D-1
*	CN302	D-7
	CN401	B-2
	D201	D-4
	D202	C-4
*	D301	F-12
*	D302	A-11
*	D303	F-12
*	D304	F-9
	D401	C-3
	D402	D-3
	FB301	E-1
	FB302	D-1
	FB303	D-1
	FB304	E-1
	IC201	E-4
	IC202	C-4
	IC301	E-2
	IC302	E-2
	IC401	C-2
	IC402	C-3
	L201	E-4
	L202	E-5
	L203	D-5
	L301	F-1
	L302	D-3
	L401	C-1
	L402	E-1
	L403	E-1
	L404	C-1
	L405	C-2
	Q201	E-3
	Q202	E-3
	Q203	D-4
	Q204	E-4
	Q205	C-5
	Q206	E-4
	Q207	C-4
	Q208	C-5
	Q209	D-5
	Q210	C-4
	Q301	F-3
	Q401	C-3
	Q402	C-3
	Q403	C-3
	Q404	C-3
	R203	E-4
	R204	E-4
	R205	E-3
	R206	E-4
	R207	E-4
	R208	E-4
	R209	E-3
	R210	D-3
	R211	C-4
	R212	C-5
	R213	C-5
	R214	C-5
	R215	E-4
	R216	C-5
	R217	D-6
	R218	D-5
	R219	C-4
	R220	C-4
	R221	C-4
	R222	C-4
	R223	C-4
*	R303	D-12
*	R304	E-12
*	R306	E-10
	R307	F-3
*	R308	E-11
*	R309	E-10
	R310	E-2
*	R311	E-10
*	R312	E-10
*	R313	E-10
	R314	E-2
	R315	E-2
*	R316	E-10
*	R317	E-10
*	R318	E-10
*	R319	E-10
	R320	D-2
	R321	E-2
	R322	F-3
*	R323	D-12
	R324	F-3
	R401	C-1
*	R402	B-11
	R403	D-3
*	R404	D-12
*	R405	D-12
	R406	D-2
	R408	C-2
	R409	C-2
	R410	D-2
	R411	C-3
	R412	C-2
	R414	C-2
	R415	C-2
	R416	C-3
	R417	C-3
	R418	C-2
*	R419	D-12
*	R420	D-12
	R421	D-2
	R422	D-2
	R424	C-1
	R425	C-3
	R426	B-3
	R427	C-1
	R428	D-3
	R429	C-3
*	R430	C-11
	R431	C-1
	R432	C-3
	R433	B-3
	R434	C-2
	R435	B-3
	R436	B-3
	R437	B-3
	R438	C-2
	R439	B-3
	R440	D-3
	R441	D-3
	R442	D-3
	R443	C-2
	R444	B-3
	R445	C-2
	R446	C-2
	R447	C-2
	R448	C-2
	R449	C-2
	R450	C-2
	R451	C-2
	R452	C-2
	R453	C-2
	R454	C-1
	R455	C-1
*	R456	C-12
*	R457	C-12
*	R458	C-11
*	R459	C-11
*	R460	B-11
*	R461	C-11
*	R462	C-11
*	R463	C-11
*	R464	C-11
*	R465	C-11
*	R466	C-11
	R467	D-6
*	S301	A-9
*	S303	F-12
*	S304	F-11
*	S305	A-10
*	S306	F-10
*	S307	F-9
	T201	D-5

SECTION 5
ADJUSTMENTS

1. Adjusting items when replacing main parts and boards

When replacing main parts and boards, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Replaced parts: Block replacement: Lens device	Prelamp LED	Flash unit	Base unit *2	LCD block	LCD unit (LCD901)	Back light unit (ND901)	Mounted parts replacement: CD-333/334 board IC101/IC401 (CCD imager)	CD-333/334 board IC202 (S/H, AGC, A/D)	SY-67 board IC301 (CAMERA DSP)	SY-67 board IC101 (EVR)	SY-67 board IC201 (Video amp.)	PK-58 board IC302 (RGB decoder) (LCD)	PK-58 board IC301 (EVR) (LCD)	PK-58 board IC401 (Timing generator) (LCD)	Board replacement: CD-333/334 board (COMPLETE)	SY-67 board (COMPLETE)	PK-58 board (COMPLETE)	MD-083 board (COMPLETE)	SY-67 board IC505 EEPROM	MD-083 board IC406 EEPROM	Supporting RadarW
Initialization of B, D, E, F, 7, 9 page data	Initialization of D page data																				●		
	Initialization of B, E, F, 7, 9 page data																	●			●		
Video	Video output level adj.										●	●	●								●		
Camera	HALL adj. *1	●										●						●			●		●
	Flange back adj.	●							●									●			●		●
	F No. standard data Input	●							●									●			●		●
	Mechanical shutter adj.	●							●									●			●		●
	Light value adj.	●							●	●							●	●			●		●
	Mixed color cancel adj.	●							●	●							●	●			●		●
	AWB standard data input	●							●	●							●	●			●		●
	Auto white balance adj.	●							●	●							●	●			●		●
	Color reproduction adj.	●							●	●							●	●			●		●
	CCD white defect compensation								●									●			●		●
	CCD black defect compensation								●									●			●		●
	Strobe adj.			●					●	●							●	●			●		●
	LED illumination check	●	●																				
LCD	LCD initial data input																	●			●		
	VCO adj.														●	●		●	●		●		
	D range adj.													●	●			●	●		●		
	Bright adj.													●	●			●	●		●		
	Contrast adj.													●	●			●	●		●		
	Color adj.													●	●			●	●		●		
	V-COM level adj.													●	●			●	●		●		
	V-COM adj.					●								●	●			●	●		●		
	White balance adj.					●	●							●	●			●	●		●		
System control	Battery end adj.																	●			●		
	Serial No. input																	●			●		
Mechanism	Mechanical adj.				●															●		●	

*1: MVC-CD200 model only.

*2: When replacing the Base unit, reset the data of page: D, address: EC to EF to “00”. (Refer to “Record of Use check” of “5-2. SERVICE MODE”.)

Table. 5-1-1.

5-1. ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT

1-1-1. List of Service Tools

• Oscilloscope • Color monitor • Vectorscope • AC power adapter
• Regulated power supply • Digital voltmeter • Frequency counter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	Pattern box PTB-450	J-6082-200-A	
J-3	Color chart for pattern box	J-6020-250-A	
J-4	Siemens star chart	J-6080-875-A	For checking the flange back
J-5	Adjustment remote commander (RM-95 upgraded) Note1	J-6082-053-B	
J-6	Clear chart for pattern box	J-6080-621-A	
J-7	CPC-9 jig	J-6082-393-C	For connecting the adjustment remote commander For adjusting the LCD block
J-8	Extension cable (50P, 0.5mm)	J-6082-487-A	For extension between the SY-67 board (CN701) and MD-083 board (CN404)
J-9	Alignment disk	J-6082-512-A	For Base unit inspection
J-10	Personal computer with Windows98/ME installed		For checking the recorded picture
J-11	Mini pattern box	J-6082-353-B	For adjusting the flange back
J-12	Camera table	J-6082-384-A	For adjusting the flange back
J-13	Extension cable (18P, 0.5mm)	J-6082-374-A	For extension between the MD-083 board (CN002) and the base unit.

Note1: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), The pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

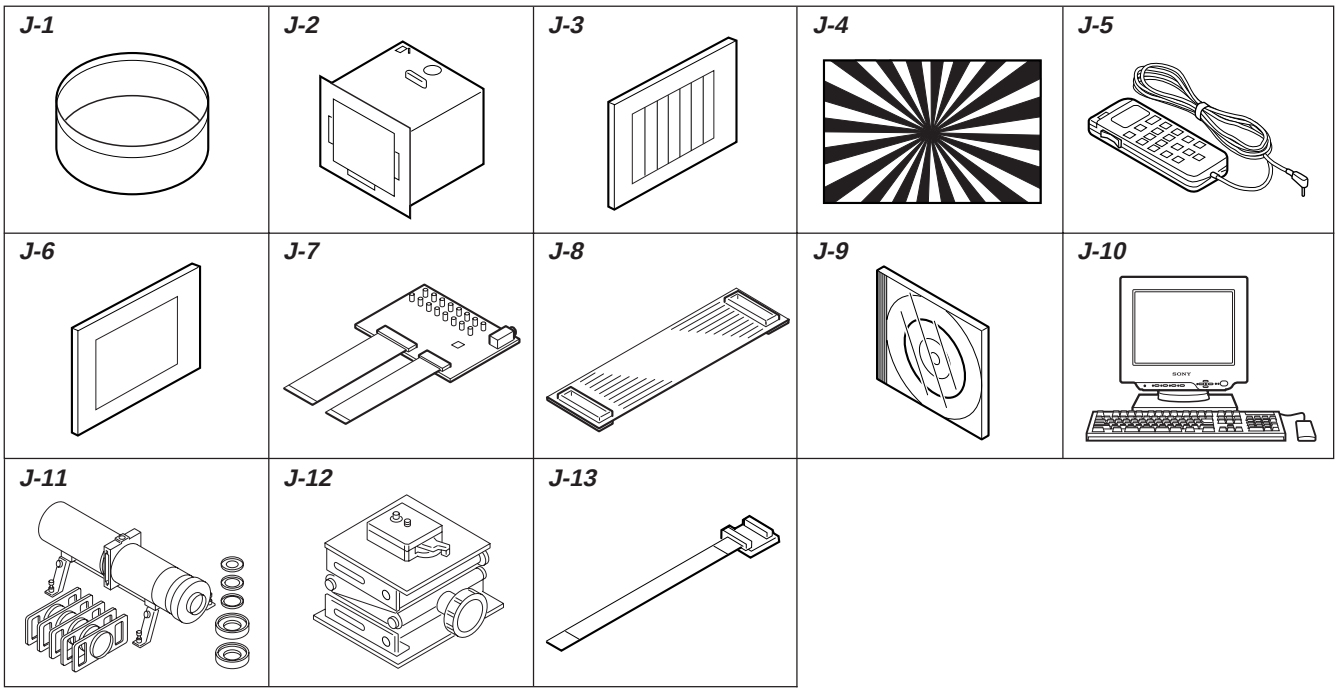


Fig. 5-1-1.

1-1-2. Preparations

Note1: For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

Note2: When performing only the adjustments, the lens block and boards need not be disassembled.

1) Connect the equipment for adjustments according to Fig. 5-1-5.
2) The lens block (CD-333/334 board) must be connected, because the timing generator (IC201) is provided on the CD-333/334 board of the lens block.
3) Connect the adjustment remote commander to the following connector or jack.
   • CN302 of PK-58 board via CPC-9 jig (J-6082-393-C)
   • LANC (ACC) jack
4) If "CLOCK SET" display appeared in the screen after the power is turned on, set the clock, or cancel the display.

Note3: As disconnecting the SY-67 board CN709 means disconnecting the lithium 3V power supply (JK-208 board BT101), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the SY-67 board CN709 has been disconnected, the self-diagnosis data will be lost. Before disconnecting, note down the self-diagnosis data (data of page: 2, address: B3 to B5). (Refer to "SELF-DIAGNOSIS FUNCTION" and "5-2. Service Mode" for the self-diagnosis data.)

Note4: Setting the "Forced Power ON Mode (Forced STILL Mode)"
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the power (STILL (Auto) mode) to be turned on with POWER switch (SY-67 board CN705) disconnected. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note5: Setting the "Forced Power ON Mode (Forced PLAY Mode)"
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the power (PLAY mode) to be turned on. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note6: Setting the "Forced Power ON Mode (Forced MOVIE Mode)"
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 03, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the power (MOVIE mode) to be turned on. After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note7: Exiting the "Forced Power ON Mode"
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

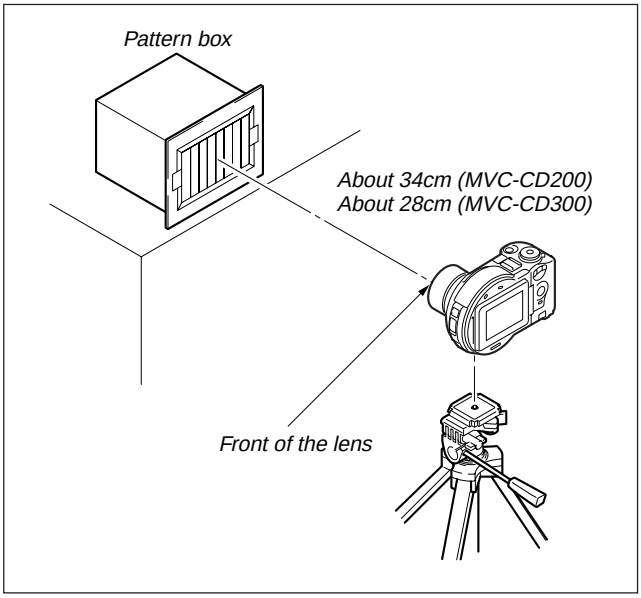


Fig. 5-1-2.

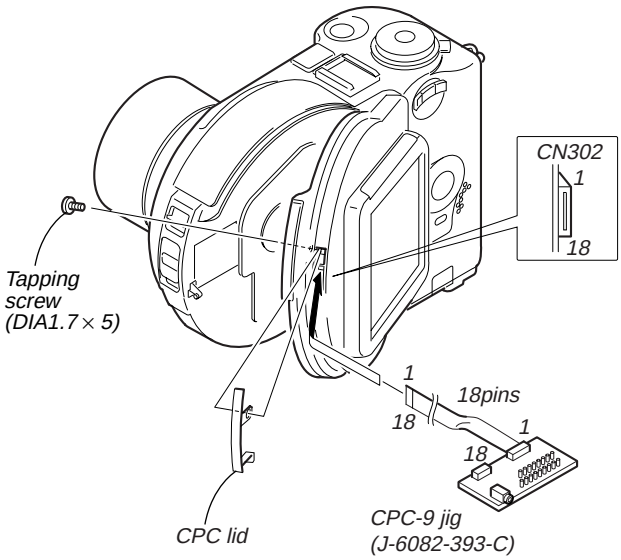


Fig. 5-1-3.

1-1-3. Discharging of the flashlight power supply

The capacitor which is used as power supply of flashlight is charged with 200V to 300V voltage. Discharge this voltage before starting adjustments in order to protect service engineers from electric shock during adjustment.

Discharge procedure

1. Remove the power supply (AC power adaptor or battery).
2. Fabricate the discharging jig as shown in Fig. 5-1-4 locally by yourself. Connect the discharging jig to the positive (+) and negative (-) terminal of the flash voltage charge capacitor. Allow ten seconds to discharge the voltage.

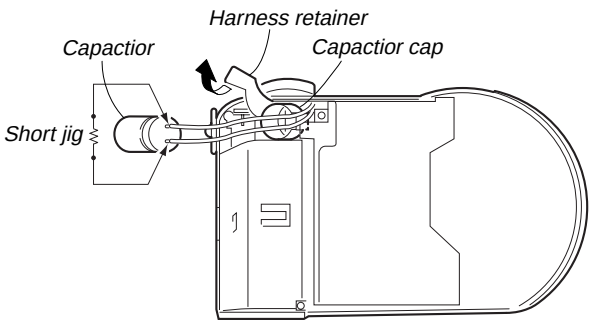
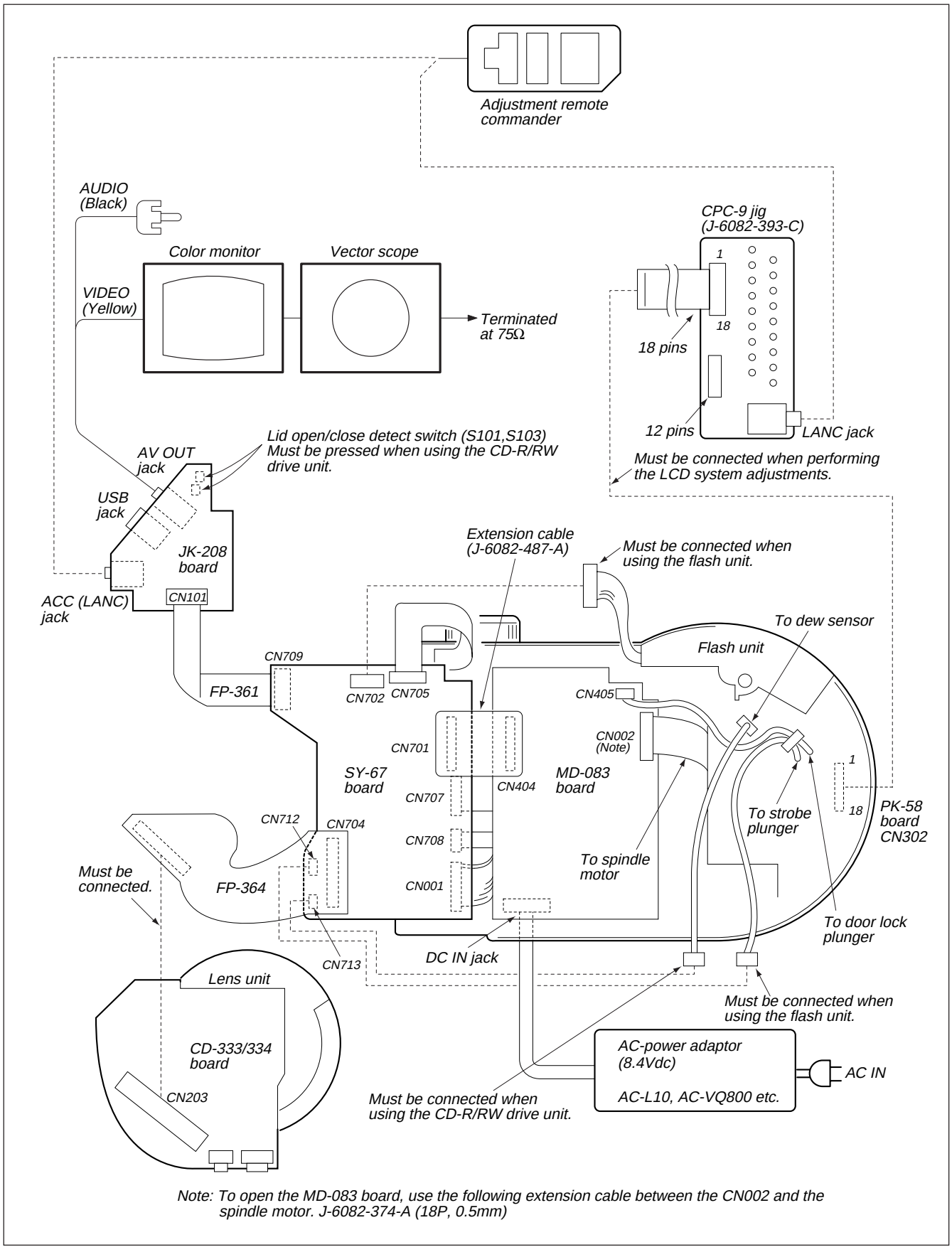


Fig. 5-1-4.



Note: To open the MD-083 board, use the following extension cable between the CN002 and the spindle motor. J-6082-374-A (18P, 0.5mm)

Fig. 5-1-5.

1-1-4. Precaution

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments.

SETUP settings

DEMO MODE (SETUP2) ..... OFF
VIDEO OUT (SETUP2) ..... NTSC

MENU settings

1. WHITE BALANCE ..... AUTO
2. ISO ..... AUTO
3. IMAGE SIZE ..... 2048 × 1536 (MVC-CD300)
   ..... 1600 × 1200 (MVC-CD200)
4. PICTURE EFFECT ..... OFF

Switch settings

1. Mode dial ..... Auto ( )
2. ZOOM W ..... WIDE end
3. MACRO ( ) ..... Off
4. FOCUS (PK-58 board) ..... Manual (0.3m)
5. EV (PK-58 board) 0EV
6. AE LOCK (PK-58 board) ..... Off

2. Order of Adjustments

Basically carry out adjustments in the order given.

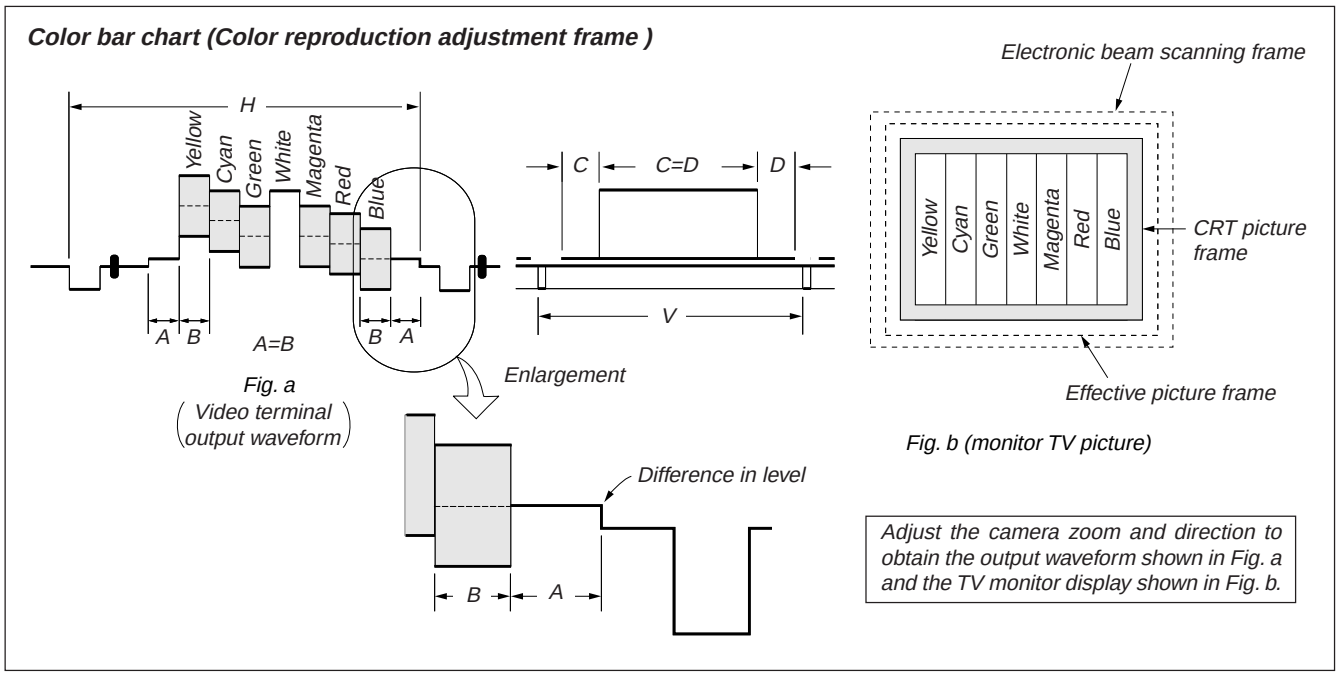


Fig. 5-1-6.

3. Subjects

1) Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-6. (Standard picture frame)
2) Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)
3) Flange back adjustment chart
   Make the chart shown in Fig. 5-1-7 using A0 size (1189mm × 841mm) black and white vellum paper.

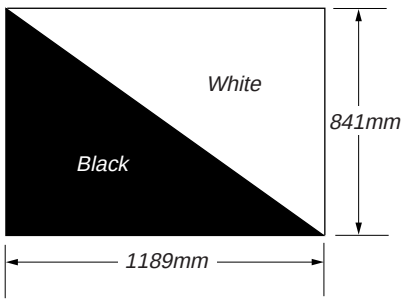


Fig. 5-1-7.

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

1-2. INITIALIZATION OF B, D, E, F, 7, 9 PAGE DATA

1-2-1. INITIALIZATION OF D PAGE DATA

1. Initializing the D Page Data

Note: If the D page data has been initialized, the following adjustments need to be performed again.

1) Modification of D page data
2) LCD system adjustments
3) Color viewfinder system adjustments
4) Battery end adjustments

Adjusting page	D
Adjusting Address	10 to EF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	4	03		Set the following data. 12: MVC-CD200 11: MVC-CD300
3	4	00	2D	Set the data.
4	4	01	2D	Set the data, and press PAUSE button.
5	4	02		Check that the data changes to "01".
6	2	00	29	Set the data.
7	2	01	29	Set the data, and press PAUSE button.
8				Perform "Modification of D Page Data".

2. Modification of D Page Data

If the D page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camera may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of D Page data

Order	Page	Address	Data	Procedure
1	2	00	29	Set the data.
2	2	01	29	Set the data, and press PAUSE button.

3. D Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the D Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of D Page Data".)

Address	Initial value	Remark
00 to 0F		
10	00	Test mode
11 to 4D		Fixed data-1
4F		Fixed data-2
50 to 8F		Fixed data-1
90	86	Battery end adj.
91	8E	
92	9D	
93	B2	
94	BD	
95 to B5		Fixed data-1
B6	1D	Battery end adj.
B7	09	
B8 to C5		Fixed data-1
C6	5A	Video output level adj.
C7	61	
C8 to CD		Fixed data-1
CE	BA	Bright adj. (LCD)
CF	B8	Contrast adj. (LCD)
D0	AA	Bright adj. (LCD)
D1	66	Color adj. (LCD)
D2	98	White balance adj.
D3	7A	
D4	B8	Contrast adj. (LCD)
D5	B0	D range adj. (LCD)
D6	7C	V-COM level adj. (LCD)
D7	6F	VCO adj. (NTSC) (LCD)
D8	74	V COM adj. (LCD)
D9	73	Fixed data
DA to DB		Fixed data-1
DC	B5	Fixed data
DD	6F	VCO adj. (PAL) (LCD)
DE	9A	Bright adj. (LCD)
DF	B8	Contrast adj. (LCD)
E0 to EB		Fixed data-1
EC	00	Recording counter
ED	00	
EE	00	
EF	00	

Table. 5-1-2.

1-2-2. Initializing the B, E, F, 7, 9 Page Data

1. Initializing the B, E, F, 7, 9 Page Data

Note1: If "Initializing the B, E, F, 7, 9 Page Data" is performed, all data of the B page, E page, F page 7 page and 9 page will be initialized. (It is impossible to initialize a single page.)

Note2: If the B, E, F, 7, 9 Page data has been initialized, "Modification of B, E, F, 7, 9 Page Data" and following adjustments need to be performed again.

1) Video system adjustments
2) Camera system adjustments

Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	7
Adjusting Address	00 to FF
Adjusting page	9
Adjusting Address	00 to FF
Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	B
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	03		Set the following data. 12: MVC-CD200 11: MVC-CD300
3	6	00	2D	Set the data.
4	6	01	2D	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01".
6				Perform "Modification of B, E, F, 7, 9 Page Data".

2. Modification of B, E, F, 7, 9 Page Data

If the B, E, F, 7, 9 Page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camera may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of B, E, F, 7, 9 Page data

Order	Page	Address	Data	Procedure
1	2	00	29	Set the data.
2	2	01	29	Set the data, and press PAUSE button.

3. F Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7, 9 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, E, F, 7, 9 Page Data".)

Address	Initial value		Remark
	CD200	CD300	
10 to 13			Fixed data-1
14	12	33	Flange back adj.
15	A8	48	
16	18	DA	
17	C5	DF	
18	12	13	
19	C9	C0	
1A	00	00	
1B	00	00	
1C	00	00	
1D	00	00	
1E	41	00	
1F	00	00	
20	20	20	
21	20	20	
22	20	BA	
23	44	46	
24	0A	0A	
25	00	00	
26	B2	85	Light value adj.
27	63	B0	
28	2E	94	
29	00	00	F No. compensation
2A	00	00	
2B	00	00	
2C	00	00	
2D	00	00	
2E	69		HALL adj. (MVC-CD200)
2F	84		Fixed data-1 (MVC-CD300)
30 to 33			Fixed data-1
34	15		HALL adj. (MVC-CD200)
35	78		Fixed data-1 (MVC-CD300)
36 to 39			Fixed data-1
3A	2F	2F	AWB standard data input
3B	37	37	
3C	40	40	
3D	D0	D0	
3E			Fixed data-1
3F	86	B5	Auto white balance adj.
40	41	43	
41	03	03	Color reproduction adj.
42	E9	E9	
43	63	63	
44	83	83	
45	D5	D5	
46	FE	FE	
47	73	73	
48	45	45	
49 to 4C			Fixed data-1
4D	28	28	Strobe adj.
4E	6E	6E	

F page

Address	Initial value		Remark
	CD200	CD300	
4F to 58			Fixed data-1
59	00	00	AWB standard data input
5A	14	14	Mechanical shutter adj.
5B			Fixed data-1
5C	63	63	Color reproduction adj.
5D	83	83	
5E	03	03	
5F	E9	E9	
60 to 63			Fixed data-1
64	10	10	Strobe adj.
65 to 68			Fixed data-1
69	02	02	Strobe adj.
6A	79	79	
6B	F8	F8	
6C	09	10	Mechanical shutter adj.
6D	E6	05	
6E	05	09	
6F	D5	B5	
70	04	07	
71	9B	C4	
72	03	07	
73	DC	48	
74	03	06	
75	50	CB	
76	01	01	
77	01	01	
78	01	01	
79	01	01	
7A	00	01	
7B	09	2C	
7C	17	3A	
7D	33	2E	
7E	33	2D	
7F	33	2D	
80	00	00	Auto white balance adj.
81 to 86			Fixed data-1
87	FF	FF	Flange back adj.
88		00	Flange back adj.(MVC-CD300)
89		00	Fixed data-1 (MVC-CD200)
8A	00	00	Flange back adj.
8B	00	00	
8C		00	Flange back adj.(MVC-CD300)
8D		00	Fixed data-1 (MVC-CD200)
8E		00	
8F		00	
90		00	
91		00	
92		00	
93		00	
94		00	
95		00	
96		00	
97		00	
98		00	
99		00	

Address	Initial value		Remark
	CD200	CD300	
9A		00	Flange back adj.(MVC-CD300)
9B		00	Fixed data-1 (MVC-CD200)
9C to 9F			Fixed data-1
A0	00	00	Mixed color cancel adj.
A1	00	00	
A2	00	00	
A3	00	00	
A4 to A8			Fixed data-1
A9	05	0F	Auto white balance adj.
AA	02	01	
AB to D3			Fixed data-1
D4	80	80	Mechanical shutter adj.
D5	98	8A	
D6	A0	8A	
D7	A8	8A	
D8	B0	8A	
D9 to FF			Fixed data-1

Table. 5-1-3.

4. 7 Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7, 9 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, E, F, 7, 9 Page Data".)

Address	Initial value		Remark
	CD200	CD300	
00 to 5F	Fixed data-1		
60	0F	0F	CCD black defect compensation
61	FF	FF	
62	0F	0F	
63	FF	FF	
64	0F	0F	
65	FF	FF	
66	0F	0F	
67	FF	FF	
68	0F	0F	
69	FF	FF	
6A	0F	0F	
6B	FF	FF	
6C	0F	0F	
6D	FF	FF	
6E	0F	0F	
6F	FF	FF	
70	0F	0F	
71	FF	FF	
72	0F	0F	
73	FF	FF	
74	0F	0F	
75	FF	FF	
76	0F	0F	
77	FF	FF	
78	0F	0F	
79	FF	FF	
7A	0F	0F	
7B	FF	FF	
7C	0F	0F	
7D	FF	FF	
7E	0F	0F	
7F	FF	FF	
80	0F	0F	
81	FF	FF	
82	0F	0F	
83	FF	FF	
84	0F	0F	
85	FF	FF	
86	0F	0F	
87	FF	FF	
88	0F	0F	CCD white defect compensation
89	FF	FF	
8A	0F	0F	
8B	FF	FF	
8C	0F	0F	
8D	FF	FF	
8E	0F	0F	
8F	FF	FF	
90	0F	0F	
91	FF	FF	
92	0F	0F	CCD white defect compensation
93	FF	FF	
94	0F	0F	
95	FF	FF	
96	0F	0F	
97	FF	FF	
98	0F	0F	
99	FF	FF	
9A	0F	0F	
9B	FF	FF	
9C	0F	0F	
9D	FF	FF	
9E	0F	0F	
9F	FF	FF	
A0	0F	0F	
A1	FF	FF	
A2	0F	0F	
A3	FF	FF	
A4 to FF	Fixed data-1		

Table. 5-1-4.

5. 9 Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7, 9 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, E, F, 7, 9 Page Data".)

Address	Remark
00 to FF	Fixed data-1

Table. 5-1-5.

6. E Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7, 9 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, E, F, 7, 9 Page Data".)

Address	Remark
00 to FF	Fixed data-1

Table. 5-1-6.

7. B Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, E, F, 7, 9 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, E, F, 7, 9 Page Data".)

Address	Initial value		Remark
	CD200	CD300	
00 to 31	Fixed data-1		
32	00	00	Serial No. input
33	00	00	
34	00	00	
35	00	00	
36	00	00	
37	00	00	
38 to 3A	Fixed data-1		
3B	Fixed data-2		
3C to 3D	Fixed data-1		
3E	Fixed data-2		
3F to FF	Fixed data-1		

Table. 5-1-7.

1-3. VIDEO SYSTEM ADJUSTMENTS

1. Video Output Level Adjustment (SY-67 board)

Adjust the sync level and burst level of the composite video signal output.

Mode	Still (Auto (📷))
Subject	Arbitrary
Measurement Point	Video terminal of AV OUT jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	C6, C7
Specified Value	Sync level: A=286 ± 5mV (NTSC mode) A=300 ± 5mV (PAL mode) Burst level: A=286 ± 5mV (NTSC mode) A=300 ± 5mV (PAL mode)

Note: If "CLOCK SET" display appeared in the screen after the power is turned on, set the clock, or cancel the display.

SETUP setting:

VIDEO OUT (SETUP 2) ..... NTSC (NTSC mode)
..... PAL (PAL mode)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	4	F1	04	Set the data, and press PAUSE button.
3	D	C6		Change the data and set the sync level (A) to the specified value.
4	D	C6		Press PAUSE button.
5	D	C7		Change the data and set the burst level (A) to the specified value.
6	D	C7		Press PAUSE button.
7	4	F1	00	Set the data, and press PAUSE button.
8	0	01	00	Set the data.

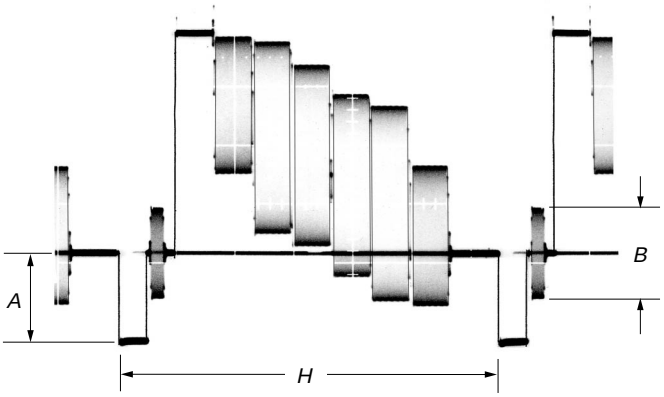


Fig. 5-1-8.

1-4. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENT" are satisfied.

Note: If "CLOCK SET" display appeared in the screen after the power is turned on, set the clock, or cancel the display.

Data Setting during Camera System Adjustments

Perform the following data setting before the camera system adjustments.

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data.

Page	Address	Data
B	75	00

Note: Press the PAUSE button each time to set the data.

After completing the camera system adjustments, release the data setting.

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data.
   Note: Press the PAUSE button each time to set the data.

Page	Address	Data
B	75	10

3) Select page: 0, address: 01, and set data: 00.

SET UP Setting during Camera System Adjustments

VIDEO OUT (SETUP2) ..... NTSC (NTSC mode)

1. HALL Adjustment (MVC-CD200) RadarW

For detecting the position of the lens iris, adjust the hall AMP gain and offset.

Mode	Still (Auto (📷))
Subject	Arbitrary
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	2E, 2F, 34, 35
Specified Value	12 to 16 during IRIS OPEN 77 to 7B during IRIS CLOSE

Note1: Displayed data of page 1 of the adjustment remote commander.

1 : 00 : XX
└ Display data

Note2: If the data of page: 6, address: 02 is "01", select page: 6, address: 01, set data: 00, and press the PAUSE button.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	94	14	Set the data.
3	6	95	79	Set the data.
4	6	01	6D	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note3)
6	6	01	00	Set the data, and press PAUSE button.

Note3: The adjustment data will be automatically input to page: F, address: 2E, 2F, 34, 35.

Checking method:

Order	Page	Address	Data	Procedure
1	0	03	03	Set the data.
2	6	01	01	Set the data, and press PAUSE button.
3	1			Check that the display data (Note1) satisfies the specified value 1.
4	6	01	03	Set the data, and press PAUSE button.
5	1			Check that the display data (Note1) satisfies the specified value.2.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	94	00	Set the data.
3	6	95	00	Set the data.
4	0	03	00	Set the data.
5	0	01	00	Set the data.

2. Flange Back Adjustment (Using Minipattern Box) RadarW

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Mode	Still (Auto (📷))
Subject	Siemens star chart with ND filter for the minipattern box (Note1)
Measurement Point	Display data of page: F, address: 87
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	14 to 25, 87, 8A , 8B (MVC-CD200) 14 to 25, 87 to 9B (MVC-CD300)
Specified value	00

Note1: Dark siemens star chart.
Note2: Check that the data of page: 6, address: 02 is "00". If not, turn the power of the unit OFF/ON.

Preparations:

1) The minipattern box is installed as shown in the following figure.
   Note: The attachment lenses are not used.
2) Install the minipattern box so that the distance between it and the front of the lens of the camcorder is less than 3cm.
3) Make the height of the minipattern box and the camcorder equal.
4) Check that the output voltage of the regulated power supply is the specified voltage.
5) Check that at both the zoom lens TELE end and WIDE end, the center of the siemens star chart and center of the exposure screen coincide.

Specified voltage: The specified voltage varies according to the minipattern box, so adjust the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

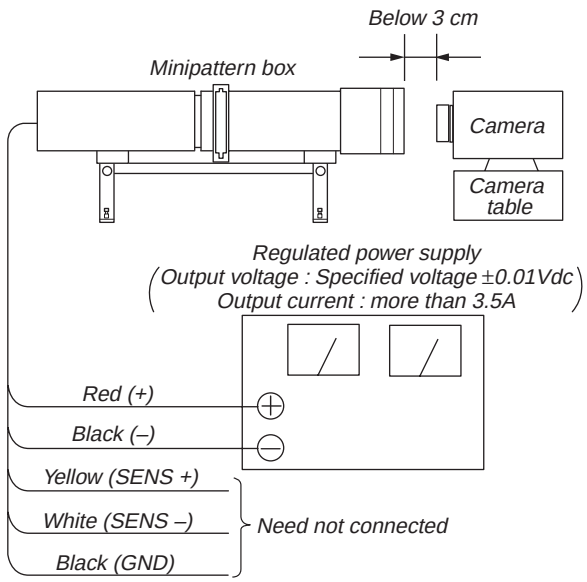


Fig. 5-1-9.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button.
3	6	01	27	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note3)
5	F	87		Check that the data is "00".

Note3: The adjustment data will be automatically input to the adjustment addresses.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.
3				Perform "Flange Back Check".

3. Flange Back Adjustment

3-1. Flange Back Adjustment (1) (Using Flange Back Adjustment Chart)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Mode	Still (Auto (📷))
Subject	Flange back adjustment chart (2.0 m from the front of the protection glass) (Luminance: 350 ± 50 lux)
Measurement Point	Display data of page: F, address: 87
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	14 to 25, 87, 8A , 8B (MVC-CD200) 14 to 25, 87 to 9B (MVC-CD300)
Specified value	00

Note1: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button.
3	6	01	15	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note2)
5	F	87		Check that the data is "00".

Note2: The adjustment data will be automatically input to the adjustment addresses.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.
3				Perform "Flange Back Adjustment (2)". (MVC-CD200) Perform "Flange Back Check". (MVC-CD300)

3-2. Flange Back Adjustment (2) (MVC-CD200)

Perform this adjustment after performing "Flange Back Adjustment (1)".

Mode	Still (Auto (📷))
Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	14 to 25, 87, 8A , 8B

Note1: Make the lens horizontal and perform this adjustment.

Preparations:

1) Set the zoom lens to the TELE end and expose a subject that is more than 500m away (subject with clear contrast such as building, etc.). (Nearby subjects less than 500m away should not be in the screen.)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button. (Note2)
				Place a ND filter on the lens so that the optimum image is obtained.
3	6	01	29	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note2)

Note2: The adjustment data will be automatically input to the adjustment addresses.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2				Perform "Flange Back Check".

4. Flange Back Check

Mode	Still (Auto (📷))
Subject	Siemens star (1.0 m from the front of the lens) (Luminance : approx. 300 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	The lens is focused.

SETUP setting:

DIGITAL ZOOM ..... OFF

Checking method:

1) Place the Siemens star 1.0m from the front of the lens.
2) Shoot the Siemens star with the zoom TELE end.
3) To open the IRIS, decrease the luminous intensity to the siemens star up to a point before noise appear on the image.
4) Turn on the auto focus.
5) Observe the TV monitor and check that the lens is focused.
6) Select page: 6, address: 2C, and set data: 01.
7) Shoot the Siemens star with the zoom WIDE end.
8) Observe the TV monitor and check that the lens is focused.

Processing after Completing Adjustments:

1) Select page: 6, address: 2C, and set data: 00.

5. Picture Frame Setting

Mode	Still (Auto (📷))
Subject	Color bar chart (Color reproduction adjustment frame) [MVC-CD200] Approx. 34cm from the front of the lens [MVC-CD300] Approx. 28cm from the front of the lens
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Switch setting:

ZOOM ..... WIDE end
FOCUS ..... Manual (0.3m)

Setting method:

1) Select page: 4, address: 06, and set data: 01.
2) Shoot the color bar chart with the zoom WIDE end.
3) Adjust the direction and distance between the pattern box and camera, and set the picture frame to the specified position.
4) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “Color reproduction adjustment frame”.
5) Select page: 4, address: 06, and set data: 00.

Check on an oscilloscope

1. Horizontal period

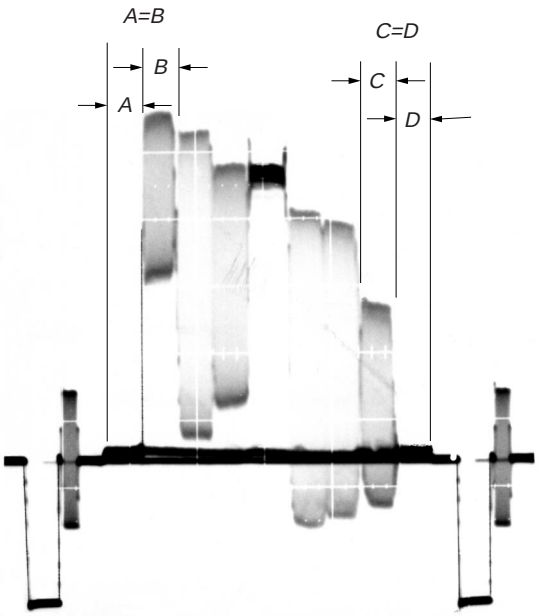


Fig. 5-1-10.

2. Vertical period

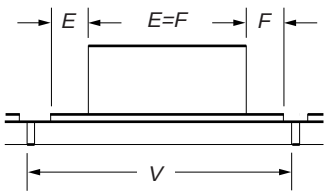


Fig. 5-1-11.

Check on the monitor TV (Underscanned mode)

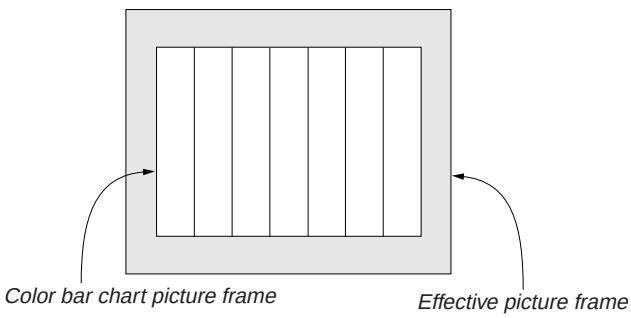


Fig. 5-1-12.

6. F No. Standard Data Input RadarW

Compensate the unevenness of the iris meter sensitivity.

Mode	Still (Auto (📷))
Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	29 to 2D

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".

Note2: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

ZOOM ..... WIDE end
FOCUS ..... Manual (0.3m)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	BB	Set the data, and press PAUSE button.
3	6	02		Check that the data changes to "01". (Note2)

Note3: The adjustment data will be automatically input to page: F, address: 29 to 2D.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	6C	00	Set the data.
3	0	01	00	Set the data.

7. Mechanical Shutter Adjustment RadarW

Adjust the period which the mechanical shutter is closed, and compensate the exposure.

Mode	Still (Auto (📷))
Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Display data of page: 6, address: AB
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	5A, 6C to 7F, D4 to D8
Specified value	00

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".

Note2: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

ZOOM ..... WIDE end
FOCUS ..... Manual (0.3m)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	AD	Set the data, and press PAUSE button.
3	6	02		Check that the data changes to "01". (Note2)
4	6	AB		Check that the data is "00".

Note3: The adjustment data will be automatically input to page: F, address: 5A, 6C to 7F, D4 to D8.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.

8. Light Value Adjustment RadarW

Adjust the standard LV value.

Mode	Still (Auto (📷))
Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Display data of page: 1 (Note3)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	26 to 28
Specified value	0FE0 to 1020 (MVC-CD200) 0FC0 to 1040 (MVC-CD300)

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".

Note2: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Note3: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
└── LV data

Switch setting:

ZOOM ..... WIDE end
FOCUS ..... Manual (0.3m)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	0D	Set the data, and press PAUSE button.
3	6	02		Check that the data changes to "01". (Note4)
4	0	03	06	Set the data.
5	1			Check that the display data (Note3) satisfies the specified value.

Note4: The adjustment data will be automatically input to page: F, address: 26 to 28.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	03	00	Set the data.
3	0	01	00	Set the data.

9. Mixed Color Cancel Adjustment RadarW

Perform the mixed color cancel adjustment using the each data of the color bars.

Mode	Still (Auto (📷))
Subject	Color bar chart (Color bar standard picture frame)
Adjustment Page	F
Adjustment Address	A0 to A3

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".

Note2: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Note3: This adjustment must be performed in NTSC mode.

Switch setting:

ZOOM ..... WIDE end
FOCUS ..... Manual (0.3m)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Check that the picture frame is set to the specified position. (Refer to "5. Picture Frame Setting".)
2	0	01	01	Set the data.
3	6	01	D7	Set the data, and press PAUSE button.
4	6	01	D5	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note2)

Note4: The adjustment data will be automatically input to page: F, address: A0 to A3.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.

10. Auto White Balance Standard Data Input RadarW

Adjust the white balance standard data at 3200K.

Mode	Still (Auto (📷))
Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	3A to 3D, 59

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".
Note2: After the power is turned on, this adjustment can be done only once.
Note3: Check that the data of page: 6, address: 02 is "00". If not, turn off the power and turn on again.

Switch setting:

ZOOM ..... WIDE end
FOCUS ..... Manual (0.3m)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	11	Set the data, and press PAUSE button.
3	6	01	0B	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note4)

Note4: The adjustment data will be automatically input to page: F, address: 3A to 3D, 59.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.

11. Auto White Balance Adjustment RadarW

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Mode	Still (Auto (📷))
Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction
Measurement Point	Display data of page 1 (Note4)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	3F, 40, 80, A9, AA
Specified Value	MVC-CD200: R ratio: 2768 to 28A8 B ratio: 5F73 to 60B3 MVC-CD300: R ratio: 26E0 to 2820 B ratio: 6060 to 61A0

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".
Note2: After the power is turned on, this adjustment can be done only once.
Note3: Check that the data of page: 6, address: 02 is "00". If not, turn off the power and turn on again.
Note4: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
└── Display data

Switch setting:

ZOOM ..... WIDE end
FOCUS ..... Manual (0.3m)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter for color temperature correction on the lens.
2	0	01	01	Set the data.
3	F	49		Write down the data.
4	F	49		Set the following data, and press PAUSE button. 28 (MVC-CD200), 27 (MVC-CD300)
5	F	4A		Write down the data.
6	F	4A		Set the following data, and press PAUSE button. 08 (MVC-CD200), 80 (MVC-CD300)
7	F	4B		Write down the data.
8	F	4B		Set the following data, and press PAUSE button. 60 (MVC-CD200), 61 (MVC-CD300)
9	F	4C		Write down the data.
10	F	4C		Set the following data, and press PAUSE button. 13 (MVC-CD200), 00 (MVC-CD300)
11	6	01	A7	Set the data, and press PAUSE button.
12	6	01	A5	Set the data, and press PAUSE button.
13	6	02		Check that the data changes to "01". (Note5)
14	6	01	3F	Set the data, and press PAUSE button.
15	0	03	04	Set the data.
16	1			Check that the display data (Note4) satisfies the R ratio specified value.
17	0	03	05	Set the data.
18	1			Check that the display data (Note4) satisfies the B ratio specified value.

Note5: The adjustment data will be automatically input to page: F, address: 3F, 40, 80, A9, AA.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	03	00	Set the data.
3	F	49		Set the data that is written down at step 3, and press PAUSE button.
4	F	4A		Set the data that is written down at step 5, and press PAUSE button.
5	F	4B		Set the data that is written down at step 7, and press PAUSE button.
6	F	4C		Set the data that is written down at step 9, and press PAUSE button.
7	0	01	00	Set the data.

12. Color Reproduction Adjustment RadarW

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

12-1. Color Reproduction Adjustment

Mode	Still (Auto (📷))
Subject	Color bar chart (Color bar standard picture frame)
Adjustment Page	F
Adjustment Address	41 to 48, 5C to 5F

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".
Note2: After the power is turned on, this adjustment can be done only once.
Note3: Check that the data of page: 6, address: 02 is "00". If not, turn off the power and turn on again.
Note4: This adjustment must be performed in NTSC mode.

Switch setting:

ZOOM ..... WIDE end
FOCUS ..... Manual (0.3m)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	B	75		Check that the data is "00". (Note1)
3	6	12	80	Set the data, and wait for 1 sec.
4	6	12	00	Set the data, and wait for 2 sec.
5	6	01	A9	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01". (Note5)

Note5: The adjustment data will be automatically input to page: F, address: 41 to 48, 5C to 5F.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.

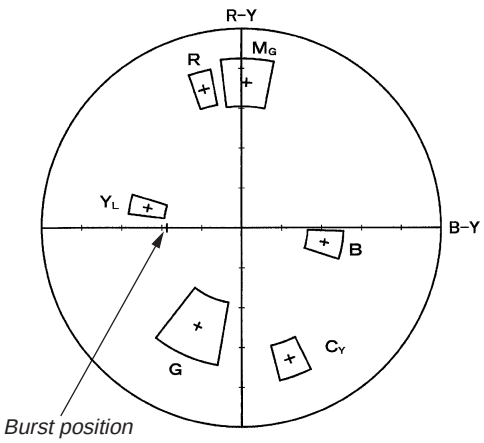


Fig. 5-1-13.

12-2. Color Reproduction Check

Mode	Still (Auto (📷))
Subject	Color bar chart (Color bar standard picture frame)
Measurement Point	Video output terminal
Measuring Instrument	NTSC vectorscope
Specified Value	Each center of all color luminance points should settle within each color reproduction frame.

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".
Note2: This adjustment must be performed in NTSC mode.
Note3: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

ZOOM ..... WIDE end
FOCUS ..... Manual (0.3m)

Checking method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	B	75		Check that the data is "00". (Note1)
3	4	06	01	Set the data.
4	6	10	01	Set the data.
5	E	52		Write down the data.
6	E	52	09	Set the data, and press PAUSE button.
7	6	01	0F	Set the data, and press PAUSE button.
8	6	12	80	Set the data, and wait for 1 sec.
9	6	12	00	Set the data, and wait for 2 sec.
10				Adjust the GAIN and PHASE of the vectorscope so that the burst luminance point is set at the specified position.
11				Check that each center of all color luminance points is set in each color reproduction frame.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	10	00	Set the data.
3	4	06	00	Set the data.
4	E	52		Set the data that is written down at step 5, and press PAUSE button.
5	0	01	00	Set the data.

13. White Balance Check

Mode	Still (Auto ( ))	
Subject	Clear chart (Color reproduction adjustment frame)	
Filter	Filter C14 for color temperature correction	
Measurement Point	Display data of page 1 (Note2)	Video output terminal
Measuring Instrument	Adjustment remote commander	Vectorscope
Specified Value	3E00 to 4200	Fig. 5-1-14.

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".

Note2: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
└── Display data

Note3: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

ZOOM ..... WIDE end
FOCUS ..... Manual (0.3m)

Checking method:

Order	Page	Address	Data	Procedure
1				Check that the lens is not covered with any filter.
2	0	01	01	Set the data.
3	4	06	01	Set the data.
4	E	52		Write down the data.
5	E	52	0E	Set the data, and press PAUSE button.
				INDOOR white balance check
6	6	01	0F	Set the data, and press PAUSE button.
7	0	03	04	Set the data.
8	1			Check that the display data (Note2) satisfies the specified value.
9	0	03	05	Set the data.
10	1			Check that the display data (Note2) satisfies the specified value.
11				Check that the center of the white luminance point is within the circle shown Fig. 5-1-14. (A).
				OUTDOOR white balance check
12				Place the C14 filter for color temperature correction on the lens.
13	6	01	3F	Set the data, and press PAUSE button.
14				Check that the center of the white luminance point is within the circle shown Fig. 5-1-14. (B).

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	4	06	00	Set the data.
3	E	52		Set the data that is written down at step4, and press PAUSE button.
4	0	01	00	Set the data.

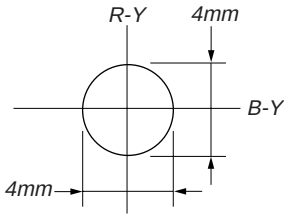
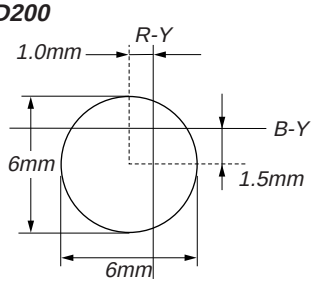


Fig. 5-1-14 (A).

MVC-CD200



MVC-CD300

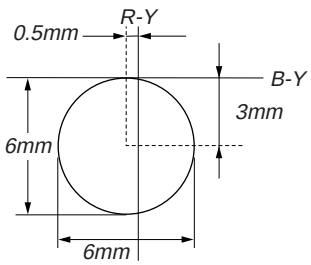


Fig. 5-1-14 (B).

14. CCD White Defect Compensation and Check RadarW

Mode	Still (Auto (📷))
Subject	Arbitrary
Measurement Point	Display data of page 6, address: 55
Adjustment Page	7
Adjustment Address	88 to A3
Specified Value1	00 to 7F
Specified Value2	00

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".
Note2: Turn on the camera power supply, wait for several minutes, then perform this adjustment.
Note3: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	DE		Write down the data.
3	F	DE	1E	Set the data, and press PAUSE button.
4	F	E3		Write down the data.
5	F	E3	0E	Set the data, and press PAUSE button.
6	6	01	8B	Set the data, and press PAUSE button.
7	6	02		Check that the data changes to "01". (Note4)
8	6	55		Check that the display data satisfies the specified value1.
9	6	01	00	Set the data, and press PAUSE button.
10	F	DE	0F	Set the data, and press PAUSE button.
11	F	E3	60	Set the data, and press PAUSE button.
12	6	01	87	Set the data, and press PAUSE button.
13	6	02		Check that the data changes to "01". (Note4)
14	6	55		Check that the display data satisfies the specified value2.

Note4: The adjustment data will be automatically input to page: F, address: 88 to A3.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	F	DE		Set the data that is written down at step2, and press PAUSE button.
3	F	E3		Set the data that is written down at step4, and press PAUSE button.
4	0	01	00	Set the data.

15. CCD Black Defect Compensation and Check RadarW

Mode	Still (Auto (📷))
Subject	Clear chart (Color bar standard picture frame) (Note2)
Measurement Point	Display data of page 6, address: 55
Adjustment Page	7
Adjustment Address	60 to 87
Specified Value1	00 to 0A
Specified Value2	00

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".
Note2: Check that there are no dust, no dirt and no reflection on the clear chart.
Note3: Any subject other than the clear chart should not be in the screen.
Note4: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:
ZOOM ..... WIDE end
FOCUS ..... Manual (0.3m)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	DF		Write down the data.
3	F	DF	4C	Set the data, and press PAUSE button.
4	6	2C	01	Set the data.
5	6	90	00	Set the data.
6	6	91	03	Set the data.
7	6	92	00	Set the data.
8	6	93	00	Set the data.
9	6	01	79	Set the data, and press PAUSE button.
10	6	30	01	Set the data.
11	6	07		Check that the data changes to "01".
12				Wait for 4 sec.
13	6	01	8D	Set the data, and press PAUSE button.
14	6	02		Check that the data changes to "01". (Note5)
15	6	55		Check that the display data satisfies the specified value1.
16	6	01	00	Set the data, and press PAUSE button.
17	F	DF	5A	Set the data, and press PAUSE button.
18	6	01	89	Set the data, and press PAUSE button.
19	6	02		Check that the data changes to "01". (Note5)
20	6	55		Check that the display data satisfies the specified value2.

Note5: The adjustment data will be automatically input to page: F, address: 60 to 87.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	2C	00	Set the data.
3	6	91	00	Set the data.
4	6	30	00	Set the data.
5	F	DF		Set the data that is written down at step2 of "Adjusting method", and press PAUSE button.
6	0	01	00	Set the data.

16. Strobe Adjustment RadarW

Adjust the light level and white balance when the strobe light flashes.

Mode	Still (Auto ( ))
Subject	Paper which reflection rate is 18% (Note2) (1.0m from the front of the lens)
Measurement Point	Data of page F, address: 64 and Display data of page 1
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	4D, 4E, 64, 69 to 6B
Specified Value1	60 to 94
Specified Value2	FA to FF or 00 to 06
Specified Value3	FA to FF or 00 to 06

Note1: This adjustment should be carried out upon completion of "Data Setting during Camera System Adjustments".

Note2: Background paper (J-250-130-A). Perform this adjustment in the dark room or use a dark box.

Note3: Any light other than the strobe light should not light up the plate.

Note4: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Note5: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
- XX (Lower data)
- XX (Upper data)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	04	10	Set the data, and press PAUSE button.
3				Check that the flash is popped up.
4	6	90	00	Set the data.
5	6	91	00	Set the data.
6	6	92	FF	Set the data.
7	6	93	FF	Set the data.
8	6	6C	01	Set the data.
9	6	2C	01	Set the data.
10	6	01	79	Set the data, and press PAUSE button.
11	6	07		Check that the data changes to "01".
12	6	01	67	Set the data, and press PAUSE button.
13	6	02		Check the flashing, and check that the data changes to "01".
14	6	01	00	Set the data, and press PAUSE button.
15	6	01	67	Set the data, and press PAUSE button.
16	6	02		Check the flashing, and check that the data changes to "01".
17	6	01	00	Set the data, and press PAUSE button.
18	6	01	B9	Set the data, and press PAUSE button.
19	6	02		Check the flashing, and check that the data changes to "01". (Note6)
20	6	01	00	Set the data, and press PAUSE button.
21	6	01	67	Set the data, and press PAUSE button.
22	6	02		Check that the data changes to "01". (Note6)
23	F	64		Check that the display data satisfies the specified value1.
24	0	03	02	Set the data.
25	1			Check that the upper data of display data satisfies the specified value2.
26	1			Check that the lower data of display data satisfies the specified value3.
27	2	04	00	Set the data.

Note6: The adjustment data will be automatically input to page: F, address: 4D, 4E, 64, 69 to 6B.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	2C	00	Set the data.
3	6	6C	00	Set the data.
4	6	92	00	Set the data.
5	6	93	00	Set the data.
6	0	01	00	Set the data.
7	0	03	00	Set the data.

17. LED Illumination Check

Check the LED illumination optical axis.

Mode	Still (Auto (📷))	
Subject	Paper which reflection rate is 18% (Note) (1.0m from the front of the lens)	
Measurement Point	LCD screen	Video output terminal
Measuring Instrument		Monitor TV
Specified Value3	Center of luminance point should settle within the frame.	

Note: Background paper (J-250-130-A). Perform this adjustment in the dark room or use a dark box.

Preparations:

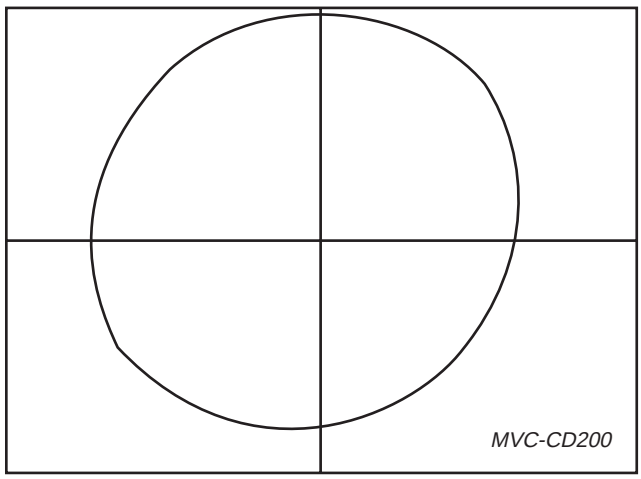
1) Take a copy of the LED optical illumination axis frame with a clear sheet. (Enlarge or reduce the frame in same size as the effective picture frame of the LCD screen or monitor TV screen.)
2) Attach the copied LED optical illumination axis frame (transparent) on the LCD screen or monitor TV screen. (The frame of the LED optical illumination axis frame and the effective picture frame of the LCD screen or monitor TV screen must be agree.)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Turn on the auto focus.
2	0	01	01	Set the data.
3	B	3D		Write down the data.
4	B	3D	64	Set the data, and press PAUSE button.
5	6	2C	01	Set the data.
6	6	90	00	Set the data.
7	6	91	04	Set the data.
8	6	92		Set the following data, and press PAUSE button. E0 (MVC-CD200), 00 (MVC-CD300)
9	6	93		Set the following data, and press PAUSE button. 26 (MVC-CD200), 50 (MVC-CD300)
10	6	01	79	Set the data, and press PAUSE button.
11	6	07		Check that the data changes to "01".
12	6	01	00	Set the data, and press PAUSE button.
13	6	23	06	Set the data.
14				Check that center of the luminance point is set in the specified frame of the LED optical illumination axis frame.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	B	3D		Set the data that is written down at step3, and press PAUSE button.
3	6	2C	00	Set the data.
4	6	91	00	Set the data.
5	6	92	00	Set the data.
6	6	93	00	Set the data.
7	0	01	00	Set the data.



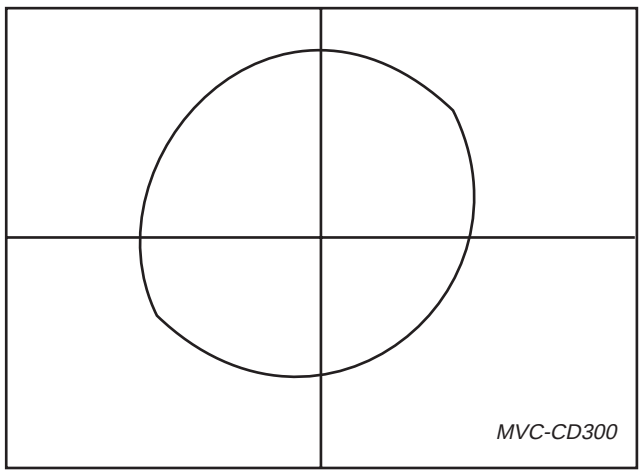


Fig. 5-1-15.

1-5. LCD SYSTEM ADJUSTMENT

Note1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note3: If "CLOCK SET" display appeared in the screen after the power is turned on, set the clock, or cancel the display.

SETUP setting:

LCD BRIGHTNESS (SETUP2) ..... NORMAL

[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN302 of PK-58 board.

Connect the Measuring Instruments via the CPC-9 jig (J-6082-393-C). The following table shows the Pin No. and signal name of CN302.

Pin No.	Signal Name	Pin No.	Signal Name
1	N. C.	10	HI UNREG
2	N. C.	11	LANC IN
3	N. C.	12	LANC OUT
4	REG GND	13	MAKER RECOG
5	N. C.	14	MS CLK
6	N. C.	15	MS BS
7	HSY	16	MS DIO
8	PANEL COM	17	N. C.
9	VG	18	VDD

Table 5-1-8.

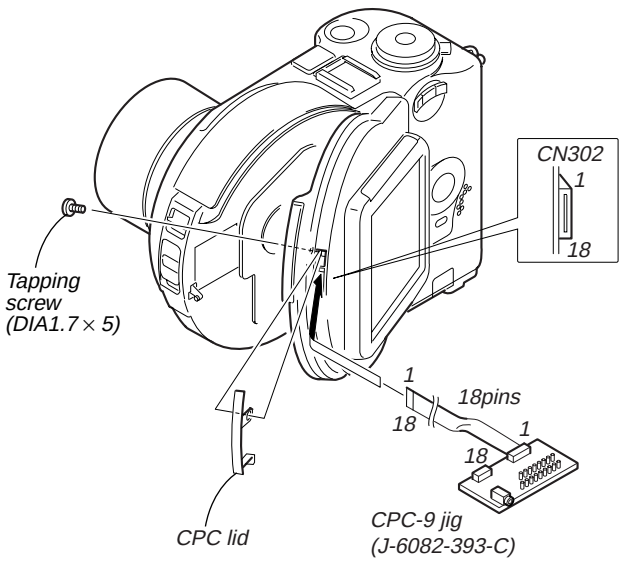


Fig. 5-1-16.

1. LCD Initial Data Input (1)

Mode	Still (Auto (📷))
Subject	Arbitrary
Adjustment Page	D
Adjustment Address	CE to D9, DC to DF

Note: Refer to "1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, and input the data in the following table.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

Address	Data	Remark
CE	BA	Bright adj.
CF	B8	Contrast adj.
D0	AA	Bright adj.
D1	66	Color adj.
D2	98	White balance adj.
D3	7A	White balance adj.
D4	B8	Contrast adj.
D5	B0	D range adj.
D6	7C	V-COM level adj.
D7	6F	VCO adj. (NTSC)
D8	74	V COM adj.
D9	73	VCO adj.
DC	B5	Fixed data
DD	6F	Fixed data
DE	9A	Fixed data
DF	B8	Fixed data

2. LCD Initial Data Input (2)

Mode	Still (Auto (📷))
Subject	Arbitrary
Adjustment Page	B
Adjustment Address	3A to 3F

Note: Refer to "1. LCD type check" for the discrimination of the LCD type.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: B, and input the data in the following table.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

Address	Data	Remark
3A	59	Fixed data
3B	FF	Fixed data
3C	04	Fixed data
3D	5B	Fixed data
3E	FF	Fixed data
3F	02	Fixed data

3. VCO Adjustment (PK-58 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	Still (Auto (📷))
Subject	Arbitrary
Measurement Point	Pin ⑦ of CN302 (HSY)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	D7 (NTSC) DD (PAL)
Specified Value 1	f = 15734 ± 30Hz
Specified Value 2	f = 15745 ± 30Hz

Setup setting:

VIDEO OUT ..... NTSC
(This adjustment must be performed in NTSC mode, so don't set the setup setting to "PAL".)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	5	F0	01	Set the data, and press PAUSE button.
3	D	D7		Change the data and set the VCO frequency (f) to the specified value 1.
4	D	D7		Press PAUSE button.
5	D	DD		Change the data and set the VCO frequency (f) to the specified value 2.
6	D	DD		Press PAUSE button.
7	5	F0	00	Set the data, and press PAUSE button.
8	0	01	00	Set the data.

4. D Range Adjustment (PK-58 board)

Set the D range of the LCD driver to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	Still (Auto (📷))
Subject	Arbitrary
Measurement Point	Pin ⑨ of CN302 (VG) External trigger: Pin ⑧ of CN302 (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D5
Specified Value	A = 3.62 ± 0.05V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	4	F1	03	Set the data.
3	D	D5		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
4	D	D5		Press PAUSE button.
5	4	F1	00	Set the data.
6	0	01	00	Set the data.

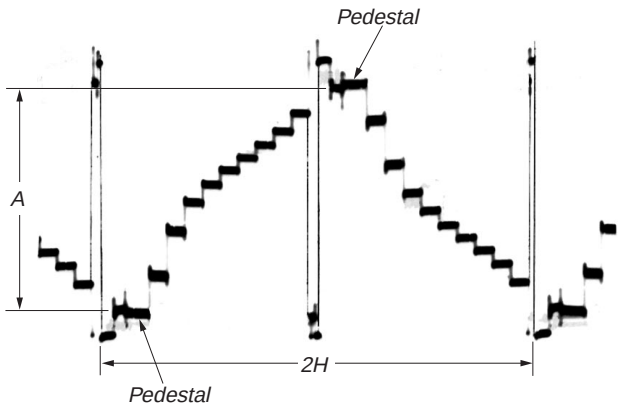


Fig. 5-1-17.

5. Bright Adjustment (PK-58 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Still (Auto (📷))
Subject	Arbitrary
Measurement Point	Pin ⑨ of CN302 (VG) External trigger: Pin ⑧ of CN302 (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D0 CE, DE
Specified Value	A = 1.81 ± 0.05V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	4	F1	03	Set the data.
3	4	10	01	Set the data.
4	D	D0		Change the data and set the voltage (A) between the pedestal and GAMMA1 limiter level to the specified value.
5	D	D0		Press PAUSE button.
6	D	D0		Read the data, and this data is named D_{D0}.
7				Convert D_{D0} to decimal notation, and obtain D_{D0}'. (Note)
8				Calculate D_{CE}' and D_{DE}' using following equations (Decimal calculation) $D_{CE}'=D_{D0}'-12$ $D_{DE}'=D_{D0}'+32$
9				Convert D_{CE}' and D_{DE}' to hexadecimal number, and obtain D_{CE} and D_{DE}. (Note)
10	D	CE	D_{CE}	Set the data, and press PAUSE button.
11	D	DE	D_{DE}	Set the data, and press PAUSE button.
12	4	10	00	Set the data.
13	4	F1	00	Set the data.
14	0	01	00	Set the data.

Note: Refer to "Table 5-4-1. Hexadecimal-decimal Conversion Table".

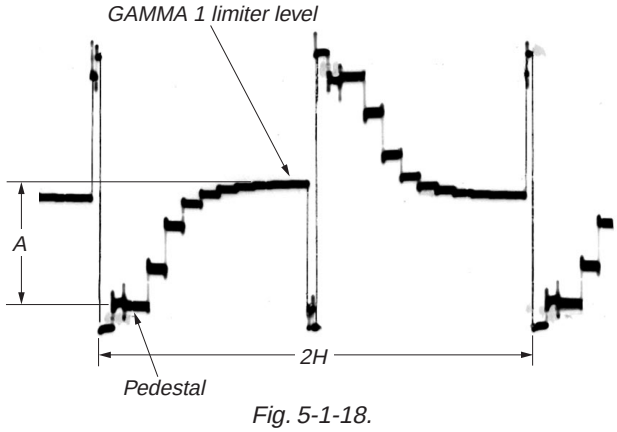


Fig. 5-1-18.

6. Contrast Adjustment (PK-58 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Still (Auto (📷))
Subject	Arbitrary
Measurement Point	Pin ⑨ of CN302 (VG) External trigger: Pin ⑧ of CN302 (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D4, CF, DF
Specified Value	A = 3.17 ± 0.07V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	4	F1	03	Set the data.
3	D	D4		Change the data and set the voltage (A) between the pedestal and 10 steps peak to the specified value.
4	D	D4		Press PAUSE button.
5	D	D4		Read the data, and this data is named D_{D4}.
6	D	CF	D_{D4}	Set the data, and press PAUSE button.
7	D	DF	D_{D4}	Set the data, and press PAUSE button.
8	4	F1	00	Set the data.
9	0	01	00	Set the data.

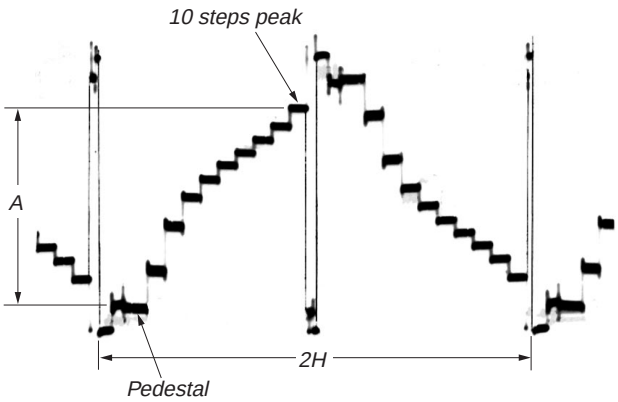


Fig. 5-1-19.

7. Color Adjustment (PK-58 board)

Set the color saturation to the standard value. If deviated, the color will be too dark or light.

Mode	Still (Auto (📷))
Subject	Arbitrary
Measurement Point	Pin ⑨ of CN302 (VG) External trigger: Pin ⑧ of CN302 (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D1
Specified Value	A = 540 ± 50mV

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	4	F1	04	Set the data.
3	D	D1		Change the data and set the voltage (A) between the white 100% (Reference level) and green to the specified value.
4	D	D1		Press PAUSE button.
5	4	F1	00	Set the data.
6	0	01	00	Set the data.

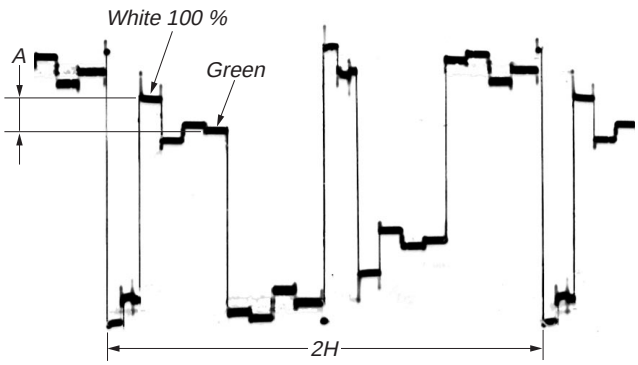


Fig. 5-1-20.

8. V-COM Level Adjustment (PK-58 board)

Set the common electrode drive signal level of LCD to the specified value.

Mode	Still (Auto (📷))
Subject	Arbitrary
Measurement Point	Pin ⑧ of CN302 (COM)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	D6
Specified Value	A = 6.50 ± 0.05V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	4	F1	03	Set the data.
3	D	D6		Change the data and set the V-COM signal level (A) to the specified value.
4	D	D6		Press PAUSE button.
5	4	F1	00	Set the data.
6	0	01	00	Set the data.

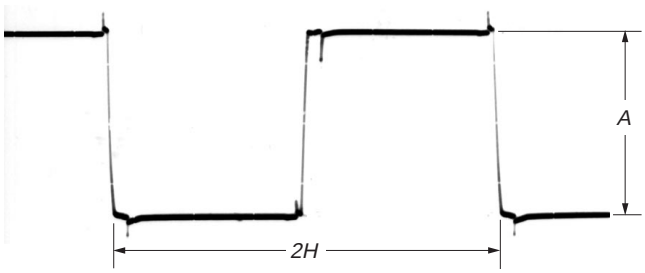


Fig. 5-1-21.

9. V-COM Adjustment (PK-58 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	Still (Auto (📷))
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	D8
Specified Value	The brightness difference between the section A and section B is minimum.

Note1: Perform “Bright Adjustment” and “Contrast Adjustment” before this adjustment.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	4	F1	01	Set the data.
3	4	10	02	Set the data.
4	D	D8		Change the data so that the brightness of the section A and that of the section B is equal.
5	D	D8		Press PAUSE button.
6	4	10	00	Set the data.
7	4	F1	00	Set the data.
8	0	01	00	Set the data.

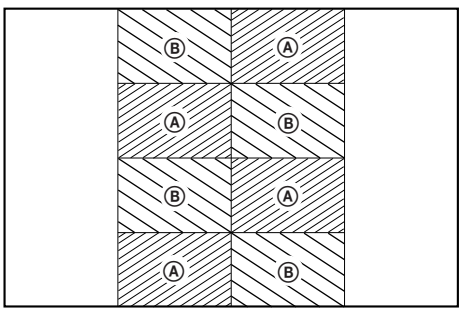


Fig. 5-1-22.

10. White Balance Adjustment (PK-58 board)

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

Mode	Still (Auto (📷))
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	D2, D3
Specified Value	The LCD screen should not be colored.

Note1: Use the AC power adaptor during this adjustment.
Note2: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC802

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	4	F1	02	Set the data.
3	D	D2	98	Set the data, and press PAUSE button.
4	D	D3	7A	Set the data, and press PAUSE button.
5	D	D3		Check that the LCD screen is not colored. If not colored, proceed to step 11.
6	D	D2		Change the data so that the LCD screen is not colored.
7	D	D2		Press PAUSE button.
8	D	D3		Change the data so that the LCD screen is not colored.
9	D	D3		Press PAUSE button.
10				If the LCD screen is colored, repeat steps 6 to 10.
11	4	F1	00	Set the data.
12	0	01	00	Set the data.

1-6. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Battery End Adjustment (SY-67 board)

Check the battery end voltage.

Mode	Still (Auto (📷))
Subject	All black (Cover the lens with a black cap)
Measurement Point	Display data of page: 2, address: 9A
Measuring Instrument	Adjustment remote commander
Adjustment Page	D
Adjustment Address	90 to 94, B6, B7

Note1: Use the CPC-9 jig for connecting the adjustment remote commander.

Switch setting:

FOCUS ..... MANUAL

Connection:

1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-1-23.

Preparations:

1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 6.1 ± 0.1Vdc.
2) Turn off the power supply.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Turn on the power supply.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2				Decrease the output voltage of the regulated power supply so that the digital voltmeter display is 5.50 ± 0.01Vdc.
2	2	9A		Read the data, and this data is named Dref.
3	D	90	Dref	Set the data, and press PAUSE button.
4				Convert Dref to decimal notation, and obtain Dref'. (Note2)
5				Calculate D_{91}', D_{92}', D_{93}', D_{94}', D_{B6}', and D_{B7}' using following equations. (decimal calculation) D_{91}' = Dref'+ 5 D_{92}' = Dref'+ 23 D_{99}' = Dref'+ 44 D_{94}' = Dref'+ 55 D_{B6}' = Dref'+ 43 D_{B7}' = Dref'+ 14
6				Convert D_{91}', D_{92}', D_{93}', D_{94}', D_{B6}', and D_{B7}' to hexadecimal number, and obtain D_{91}, D_{92}, D_{93}, D_{94}, D_{B6}, and D_{B7}. (Note2)
7	D	91	D_{91}	Set the data, and press PAUSE button.
8	D	92	D_{92}	Set the data, and press PAUSE button.
9	D	93	D_{93}	Set the data, and press PAUSE button.
10	D	94	D_{94}	Set the data, and press PAUSE button.
11	D	B6	D_{B6}	Set the data, and press PAUSE button.
12	D	B7	D_{B7}	Set the data, and press PAUSE button.
13	0	01	00	Set the data.

Note2: Refer to "Table 5-2-1. Hexadecimal-decimal Conversion Table".

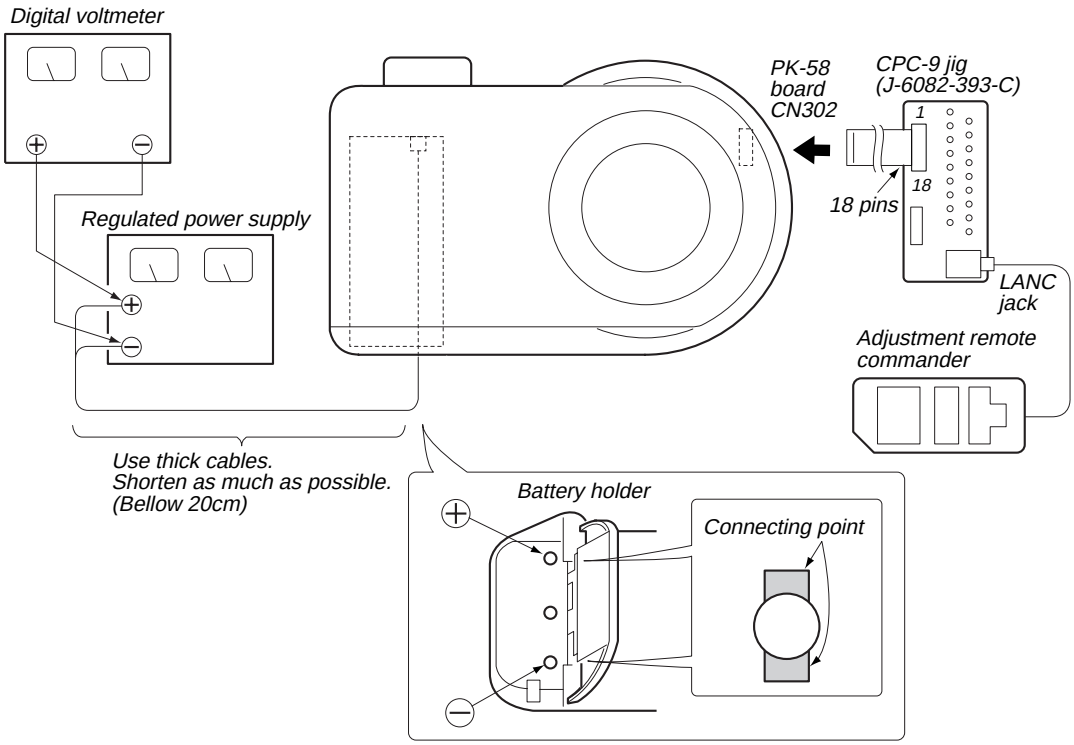


Fig. 5-1-23.

2. Serial No. Input

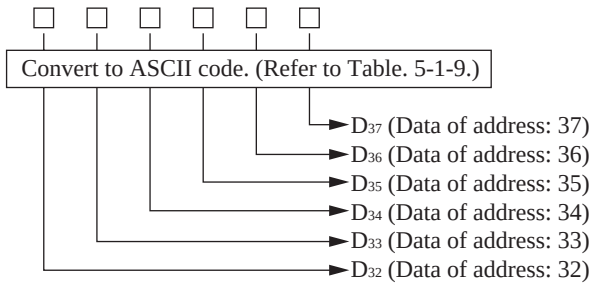
Write the serial No. in the EEPROM (nonvolatile memory). Convert the serial No. on the name plate from decimal to ASCII code, and write in the EEPROM.

Page	B
Address	32 to 37

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Read the 6-digit serial No. on the name plate, and convert each digit to ASCII code, and obtain D_{32}, D_{33}, D_{34}, D_{35}, D_{36} and D_{37}. (See below.)

6-digit serial No.


Convert to ASCII code. (Refer to Table. 5-1-9.)
D37 (Data of address: 37)
D36 (Data of address: 36)
D35 (Data of address: 35)
D34 (Data of address: 34)
D33 (Data of address: 33)
D32 (Data of address: 32)

Example: If the serial No. is 123456.

D_{32} = 31
D_{33} = 32
D_{34} = 33
D_{35} = 34
D_{36} = 35
D_{37} = 36

2) Input D_{32}, D_{33}, D_{34}, D_{35}, D_{36} and D_{37} to each address of page: B.
Note: After setting each data, be sure to press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

Digit	0	1	2	3	4	5	6	7	8	9
ASCII Code	30	31	32	33	34	35	36	37	38	39

Table. 5-1-9.

5-2. SERVICE MODE

2-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the Adjustment Remote Commander

1) Connect the adjustment remote commander to the following connector or jack.
   • CN302 of PK-58 board via CPC-9 jig (J-6082-393-C)
   • LANC (ACC) jack
2) Set the HOLD switch of the adjustment remote commander to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-2-1.

Fig. 5-2-1.

3) Operate the adjustment remote commander as follows.
   • Changing the page
   The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0 1 2 3 4 5 6 7 8 9 A B C D E F
LCD Display	0 1 2 3 4 5 6 7 8 9 A b c d E F
Decimal notation conversion value	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

   • Changing the address
   The address increases when the FF (►►) button is pressed, and decreases when the REW (◄◄) button is pressed. There are altogether 256 addresses, from 00 to FF.
   • Changing the data (Data setting)
   The data increases when the PLAY (►) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   • Writing the adjustment data
   The PAUSE button must be pressed to write the adjustment data (B, D, E, F, 7 page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)
4) After completing all adjustments, turn off the main power supply once.

2. Precautions Upon Using the Adjustment Remote Commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

2-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table

Upper digit of hexadecimal \ Lower digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

② (above the D (d) column)

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-2-1.

2-3. SERVICE MODE

1. Setting the Test Mode

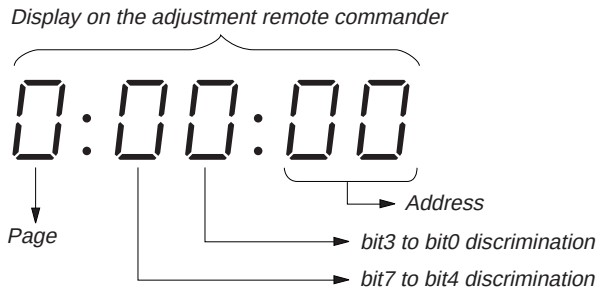
Page D	Address 10

Data	Function
00	Normal
01	Forced STILL mode power ON
02	Forced PLAY mode power ON
03	Forced MOVIE mode power ON

- Before setting the data, select page: 0, address: 01, and set data: 01.
- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, be sure to return the data of this address to “00”, and press the PAUSE button of the adjustment remote commander.
  Select page: 0, address: 01, and set data: 00.

2. Bit Value Discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for following items. Use the table below to discriminate if the bit value is “1” or “0”.



	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (R)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

Example: If “8E” is displayed on the adjustment remote commander, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

3. Switch check (1)

Page 2	Address 80

Bit	Function	When bit value = 1	When bit value = 0
0	Power switch (XPOWER ON) (Control switch block (ZK-503))	Power switch off	Power switch on
1	Mode dial (XPB ON) *1 (Control switch block (ZK-503))	Except PLAY	PLAY (▶)
2	Lens cap switch *2 (XLENS CAP OPEN)(TK-61 board S503)	Off (Without Lens cap)	On (With Lens cap)
3	Shutter button (XSHTR ON) (Control switch block (RK-503))	Off	On
4	Shutter button (XAE LOCK ON) (Control switch block (RK-503))	Off	On
5	Lid open/close switch (XLID OPEN SW)(JK-208 board S101,103)	On (Lid close)	Off (Lid open)

*1: Refer to “Switch check (2)” and “Switch check (5)”.
*2: MVC-CD300 model only.

Using method:
1) Select page: 2, address: 80.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

4. Switch check (2)

Page 2	Address 86

Bit	Function	When bit value = 1	When bit value = 0
6	Mode dial (XSETUP) *3 (Control switch block (ZK-503))	Except SETUP	SETUP

*3: Refer to “Switch check (1)” and “Switch check (5)”.

Using method:
1) Select page: 2, address: 86.
2) By discriminating the bit value of display data, the Mode dial position can be discriminated.

5. Switch check (3)

Page 2	Address 84

Using method:
1) Select page: 2, address: 84.
2) By discriminating the lower digit of the data, the rotation of the control dial can be discriminated.

Jog dial (Control switch block (ZK-503))	Lower digit of the data
When rotated upward.	···→0→4→C→8→0→···
When rotated downward.	···→0→8→C→4→0→···

6. Switch check (4)

Page 2	Address 90 to 93

Using method:

1) Select page: 2, address: 90 to 93.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data					
	00 to 14	15 to 46	47 to 70	71 to A5	A6 to DE	DF to FF
90 (KEY AD0) (IC402 ⑫)	Control button DOWN (S001)(FS-83 board)	Control button UP (S001)(FS-83 board)	MENU (S002) (FS-83 board)			No key input
91 (KEY AD1) (IC402 ⑬)	Control button RIGHT (S001)(FS-83 board)	Control button LEFT (S001)(FS-83 board)	Control button SET (S001) (FS-83 board)			No key input
92 (KEY AD2) (IC402 ⑭)	DISPLAY (S301) (PK-58 board)	AE LOCK (S303) (PK-58 board)	EV ( ) (S306) (PK-58 board)	FOCUS (S307) (PK-58 board)	SPOT METER ( ) (S304)(PK-58 board)	No key input
93 (KEY AD3) (IC402 ⑮)	ZOOM W (Control switch block (ZK-503))	ZOOM T (Control switch block (ZK-503))	JOG SET (Control switch block (ZK-503))			No key input

7. Switch check (5)

Page 2	Address 94

Using method:

1) Select page: 2, address: 94.
2) By discriminating the display data, the mode dial position can be discriminated.

Address	Data					
	00 to 14	15 to 3D	3E to 67	68 to 93	94 to D0	D1 to FF
94 (MODE DIAL) (IC402 ⑯)	Mode dial AE-S (Control switch block (ZK-503))	Mode dial AE-A (Control switch block (ZK-503))	Mode dial AE-M (Control switch block (ZK-503))	Mode dial SCN (Control switch block (ZK-503))	Mode dial MOVIE ( ) (Control switch block (ZK-503))	Mode dial AUTO ( ) or PLAY ( ) or SETUP (Control switch block (ZK-503)) Note

Note: Refer to "Switch check (1)" and "Switch check (2)".

8. LED check

Page 2	Address 04

Using method:

1) Select page: 2, address: 04, set data: 01 and press PAUSE button.
2) Check that all LED are lit.
3) Select page: 2, address: 04, set data: 00 and press PAUSE button.

9. Self Diagnosis Log check

Page 2	Address B3 to B5

Address	Initial value	Function
B3	00	Last error occurrence code
B4	00	
B5	00	

Example:

C : 32 : 01
- 01 — Address : B5
- 32 — Address : B4
- C — Address : B3 (Note)

Note: "C" → "01"
"E" → "03"

Using method:

1) The self diagnosis log is displayed at page: 2, addresses: B3 to B5.
   Note1: When no error occurs in this unit, data "00" is written in addresses B3 to B5.
   When the last error occurs, the data corresponding to the error is written in the address (B3 to B5).
   Note2: These data will be erased when the coin lithium battery (JK-208 board BT101) is removed (reset).

10. Record of Use check

Page D	Address EC to EF

Address	Function	Remarks
EC	Recording counter (Hexadecimal)	Not used.
ED		
EE		1000-digit and 100-digit
EF		10-digit and 1-digit

Using method:

1) The recording counter data is displayed at page: D, addresses: EE to EF. These data are named D_{EE} and D_{EF} respectively.
2) Convert D_{EE} and D_{EF} to decimal notation, and obtain D_{EE}' and D_{EF}'.
   (Refer to Table 5-2-1. "Hexadecimal-decimal conversion table".)
3) Calculate the recording counter (N) using following equation. (Decimal calculation)
   $N = D_{EF}' + D_{EE}' \times 256$

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: EC to EF, and write data: 00 to each address.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address: 01, and set data: 00.

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

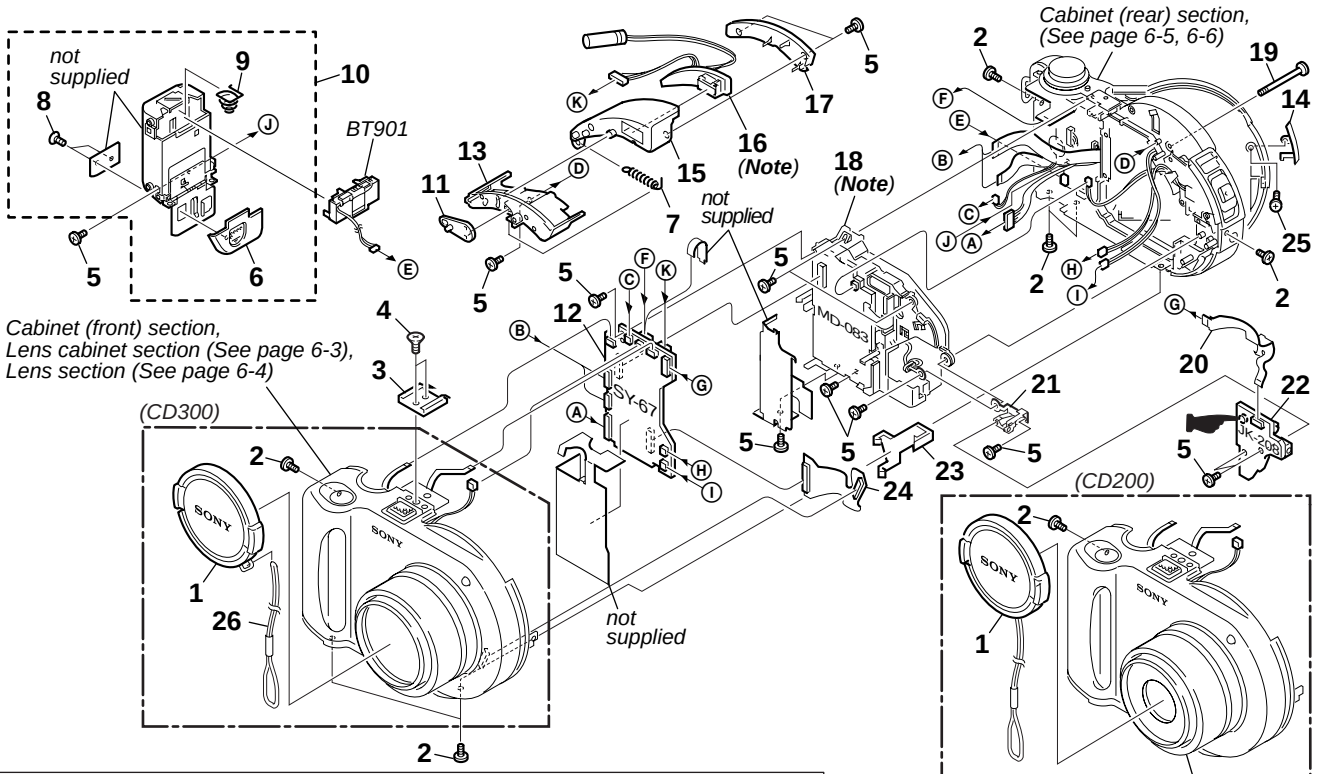
NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  CND : Canadian model.
  HK : Hong Kong model.
  AUS : Australian model.
  CN : Chinese model.
  KR : Korea model.
  J : Japanese model.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. OVERALL SECTION



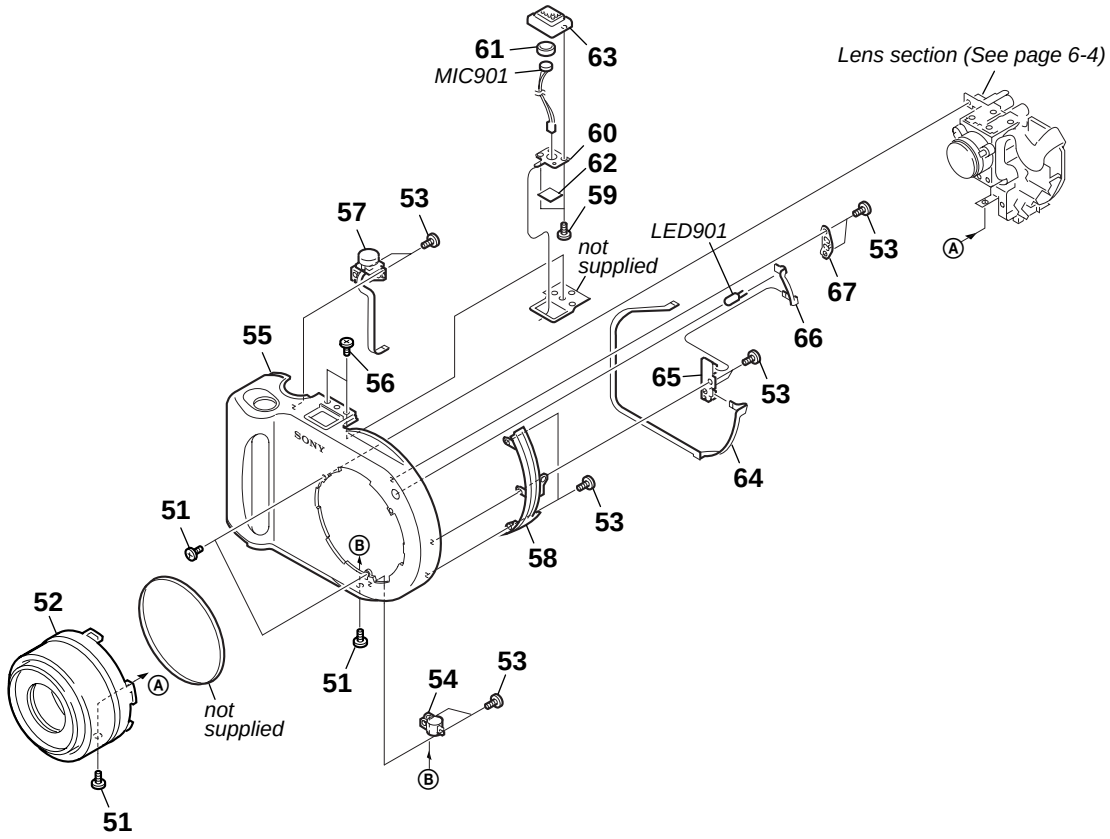
: BT101(Lithium battery) JK-208 board on the mount position. (See page 4-60)

Note: *The charging capacitor is charged to the maximum of 300V. There is a danger of electric shock due to the high voltage when the capacitor is touched by bare hand. Discharge the voltage remained in the capacitor, referring to the Service Note (See page 5).*

Ref. No.	Part No.	Description	Remarks
1	X-3951-672-1	CAP ASSY, LENS (CD300)	
1	X-3951-763-1	CAP ASSY, LENS (CD200)	
2	3-968-729-71	SCREW (M2), LOCK ACE, P2	
3	3-067-469-11	SHOE, ACCESSORY	
4	3-069-159-21	PROCESS, (M2) INTERIOR LOCK	
5	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION	
6	3-067-937-01	LID, BT (CD300)	
6	3-067-937-11	LID, BT (CD200)	
7	3-068-462-01	SPRING, ST-POP-UP	
8	3-318-382-01	SCREW (1.7X3), TAPPING	
9	3-969-380-01	SPRING, BATTERY	
10	X-3951-639-1	HOLDER ASSY, BT (CD300)	
10	X-3951-651-1	HOLDER ASSY, BT (CD200)	
11	3-068-464-01	LEVER, ST SENSOR	
12	A-7074-898-A	SY-67 (300) BOARD, COMPLETE (SERVICE)	(CD300)
12	A-7074-900-A	SY-67 (200) BOARD, COMPLETE (SERVICE)	(CD200)
13	3-068-461-01	BASE, STROBOSCOPE	
14	3-067-950-01	LID, CPC (CD300)	
14	3-067-950-11	LID, CPC (CD200)	
15	X-3951-647-1	CASE ASSY, STROBOSCOPE (CD300)	
15	X-3951-655-1	CASE ASSY, STROBOSCOPE (CD200)	
⚠16	1-476-676-11	FLASH UNIT	
17	3-067-949-01	COVER, STROBOSCOPE (CD300)	
17	3-067-949-11	COVER, STROBOSCOPE (CD200)	
18	A-7010-815-A	DDX-G2100 COMPLETE ASSY (SERVICE)	
19	3-068-474-01	SCREW (M2), SPECIAL (STEP)	
20	1-681-545-11	FP-361 FLEXIBLE BOARD	
21	3-068-475-01	NUT PLATE (SIDE)	
22	A-7074-836-A	JK-208 BOARD, COMPLETE	
23	3-068-875-01	RETAINER, B2B	
24	1-681-548-21	FP-364 FLEXIBLE BOARD	
25	3-713-791-11	SCREW (M1.7X5), TAPPING, P2	
26	3-067-797-01	STRING (T), CAP (CD300)	
BT901	1-694-815-11	TERMINAL BOARD, BATTERY	

Exploded view and parts list of DDX-G2100 COMPLETE ASSEMBLY are not shown. Page 6-8 is not shown.

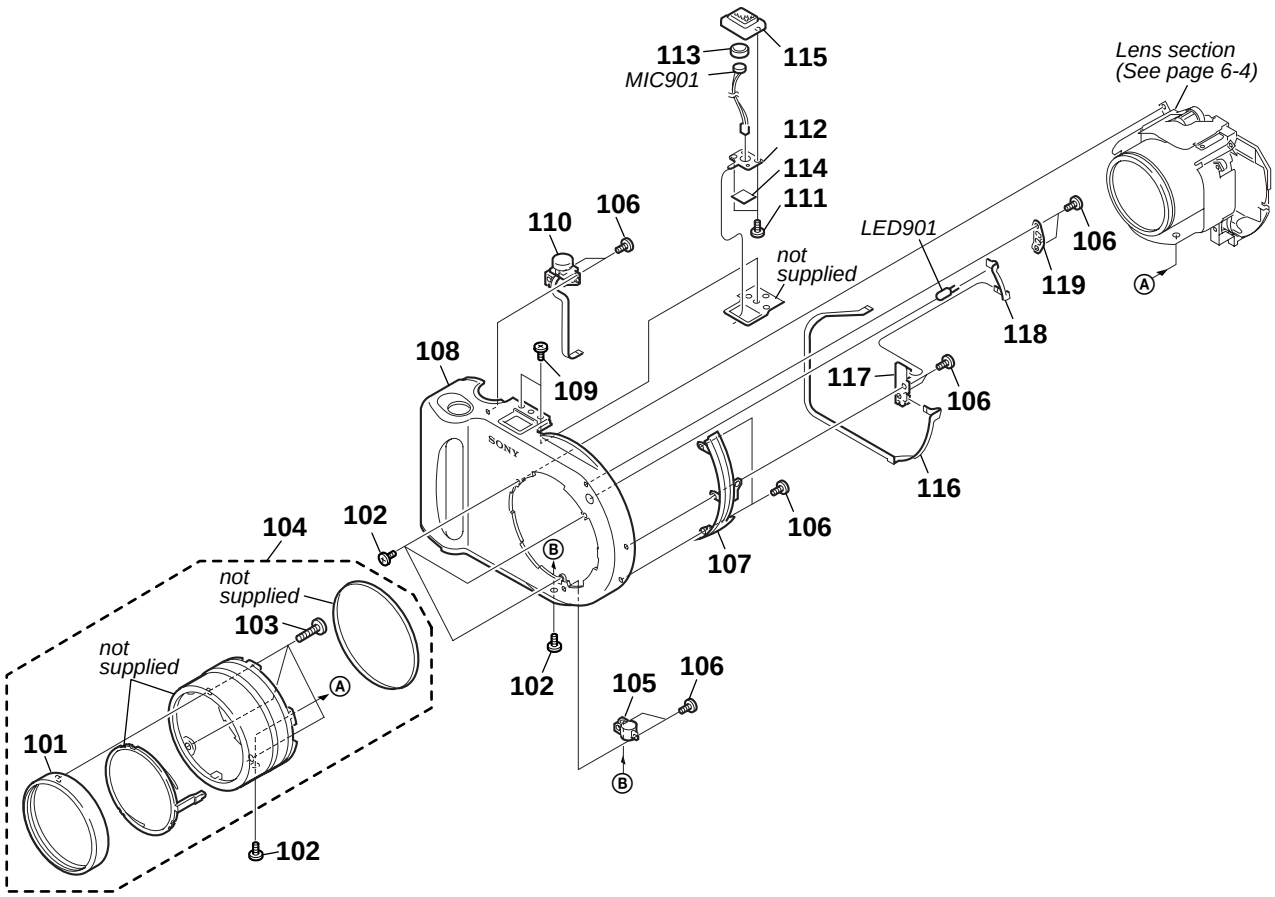
6-1-2. CABINET (FRONT) SECTION, LENS CABINET SECTION (CD200)



Ref. No.	Part No.	Description	Remarks
51	3-968-729-71	SCREW (M2), LOCK ACE, P2	
52	X-3951-650-1	CABINET ASSY, LENS	
53	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION	
54	3-060-274-01	SCREW, TRIPOD	
55	X-3951-652-1	CABINET (FRONT) ASSY	
56	3-989-735-61	SCREW (M1.7), LOCK ACE, P2	
57	1-476-674-11	SWITCH BLOCK, CONTROL (RL-503)	
58	3-067-948-11	PLATE, SIDE ORNAMENTAL	
59	3-713-791-05	SCREW (B1.7)	
60	3-068-402-01	SHEET METAL, RETAINER	

Ref. No.	Part No.	Description	Remarks
61	3-068-488-01	CUSHION, MICROPHONE	
62	3-062-299-01	SHEET, MICROPHONE	
63	X-3951-646-1	HOLDER ASSY, MICROPHONE	
64	1-681-549-11	FP-369 FLEXIBLE BOARD	
65	A-7074-907-A	TK-61 (200) BOARD, COMPLETE	
66	1-681-550-11	FP-370 FLEXIBLE BOARD	
67	3-068-494-01	CAP, LED	
LED901	8-719-084-32	DIODE TLOH20TP	
MIC901	1-542-457-11	MICROPHONE	

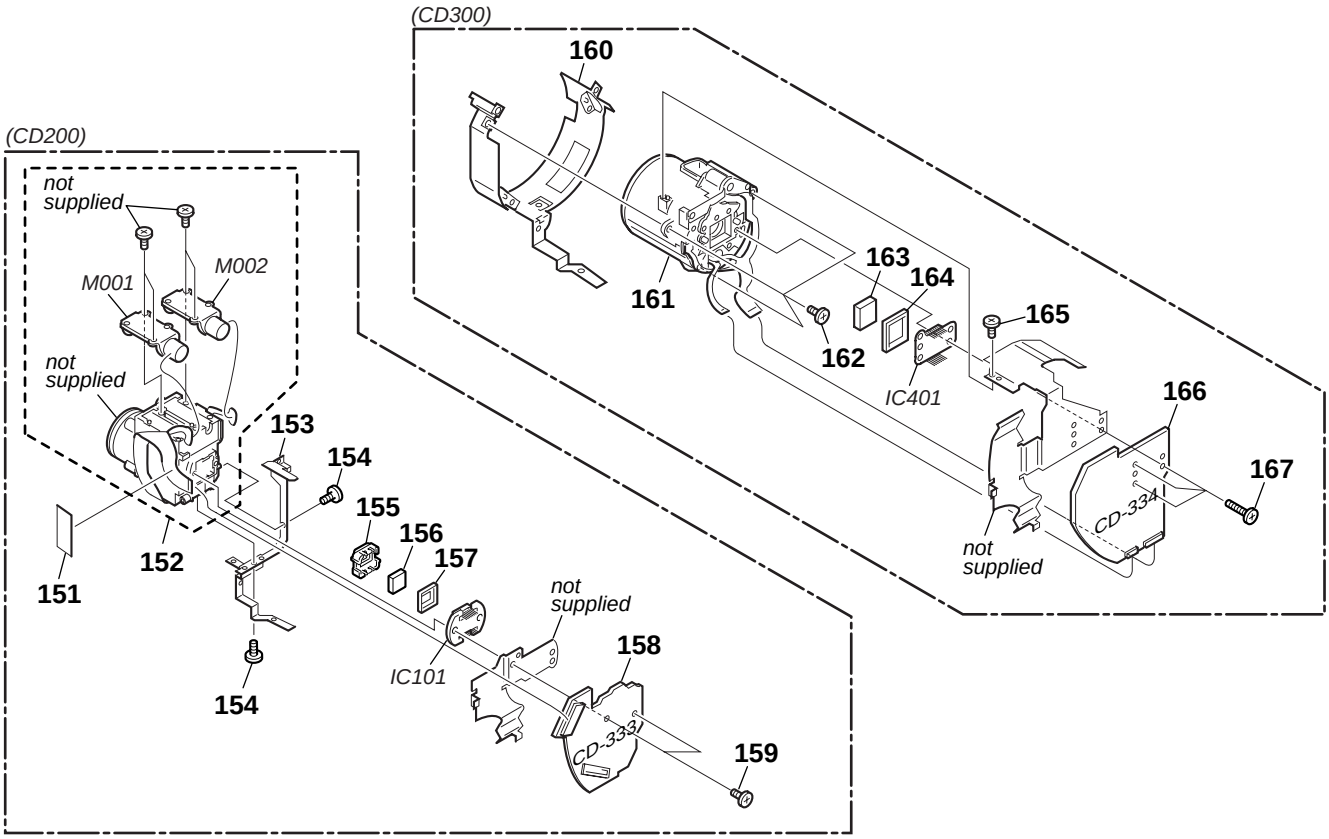
6-1-3. CABINET (FRONT) SECTION, LENS CABINET SECTION (CD300)



Ref. No.	Part No.	Description	Remarks
101	3-068-411-01	RING, FILTER	
102	3-968-729-71	SCREW (M2), LOCK ACE, P2	
103	3-060-271-01	SCREW (M1.7X7)	
104	X-3951-642-1	CABINET ASSY, LENS	
105	3-060-274-01	SCREW, TRIPOD	
106	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION	
107	3-067-948-01	PLATE, SIDE ORNAMENTAL	
108	X-3951-641-1	CABINET (FRONT) ASSY	
109	3-989-735-61	SCREW (M1.7), LOCK ACE, P2	
110	1-476-674-11	SWITCH BLOCK, CONTROL (RL-503)	
111	3-713-791-05	SCREW (B1.7)	

Ref. No.	Part No.	Description	Remarks
112	3-068-402-01	SHEET METAL, RETAINER	
113	3-068-488-01	CUSHION, MICROPHONE	
114	3-062-299-01	SHEET, MICROPHONE	
115	X-3951-646-1	HOLDER ASSY, MICROPHONE	
116	1-681-549-11	FP-369 FLEXIBLE BOARD	
117	A-7074-837-A	TK-61 BOARD, COMPLETE	
118	1-681-550-11	FP-370 FLEXIBLE BOARD	
119	3-068-494-01	CAP, LED	
LED901	8-719-084-32	DIODE TLOH20TP	
MIC901	1-542-457-11	MICROPHONE	

6-1-4. LENS SECTION

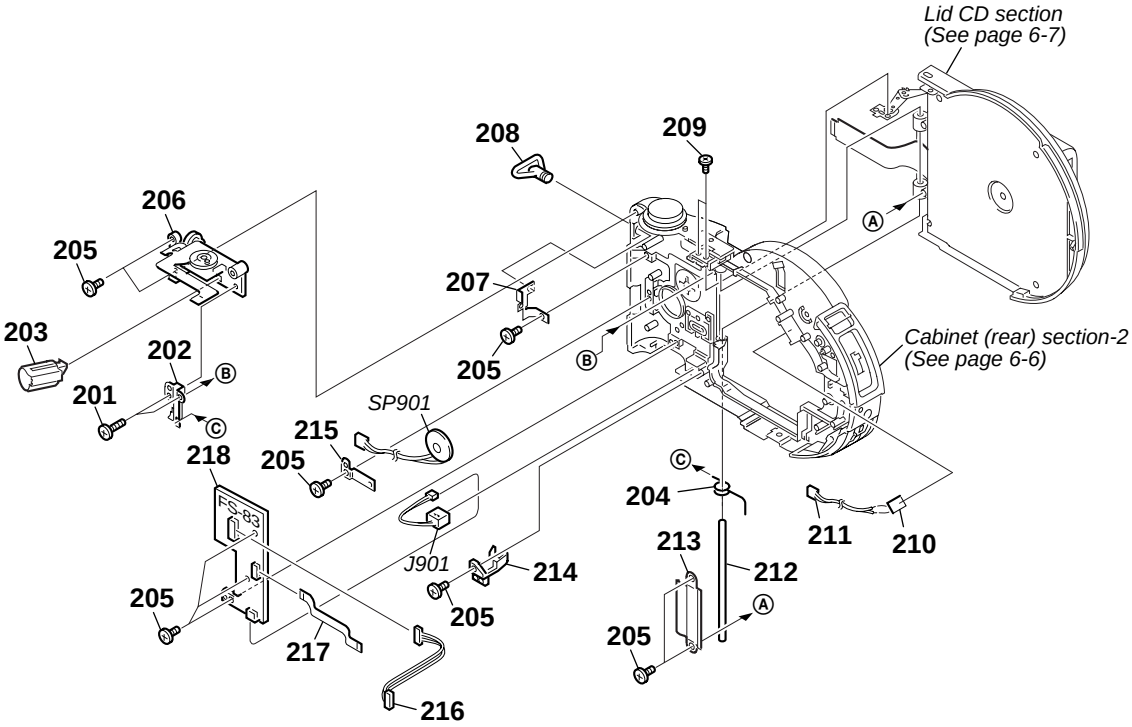


Be sure to read “Precautions Upon Replacing CCD Imager” on pages 4-15 (CD200) and 4-16 (CD300) when changing the CCD imager.

Ref. No.	Part No.	Description	Remarks
151	3-831-441-11	SPACER (CD200)	
152	1-758-415-11	LENS, ZOOM (VCL-6103WA) (CD200)	
153	3-068-533-01	FRAME (M), LENS (CD200)	
154	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION (CD200)	
155	3-058-032-01	ADAPTOR (CL), CCD FITTING (CD200)	
156	1-758-436-11	FILTER BLOCK, OPTICAL (CD200)	
157	3-060-714-01	RUBBER (CL), SEAL (CD200)	
158	A-7074-843-A	CD-333 BOARD, COMPLETE (CD200)	
159	3-947-268-11	TITE (2), +B TAPPING (P) (CD200)	
160	3-068-443-01	FRAME (H), LENS (CD300)	
161	A-7031-247-A	LENS ASSY (CD300)	

Ref. No.	Part No.	Description	Remarks
162	3-989-735-31	SCREW (M1.7), LOCK ACE, P2 (CD300)	
163	1-758-437-11	FILTER BLOCK, OPTICAL (CD300)	
164	3-067-751-01	RUBBER (N), SEAL (CD300)	
165	3-713-791-05	SCREW (B1.7) (CD300)	
166	A-7074-840-A	CD-334 BOARD, COMPLETE (CD300)	
167	3-318-203-11	SCREW (B1.7X6), TAPPING (CD300)	
IC101	A-7031-236-A	CCD BLOCK ASSY (CCD IMAGER) (CD200)	
IC401	A-7031-268-A	CCD BLOCK ASSY (CCD IMAGER) (CD300)	
M001	3-709-573-01	MOTOR UNIT, FOCUS (CD200)	
M002	3-709-574-01	MOTOR UNIT, ZOOM (CD200)	

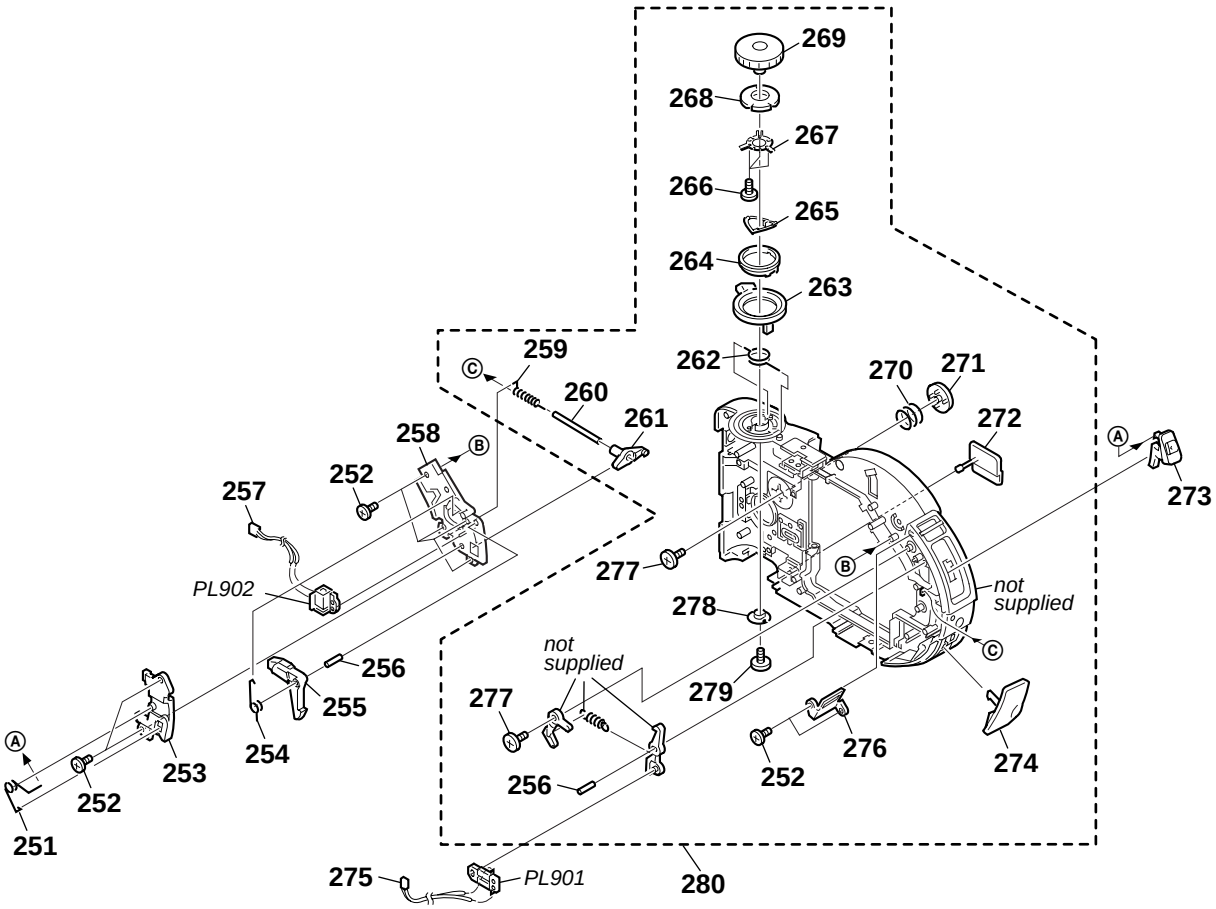
6-1-5. CABINET (REAR) SECTION-1



Ref. No.	Part No.	Description	Remarks
201	3-069-046-01	SCREW (Y) (DIA. 1.7X5.5)	
202	3-070-017-01	STAY, PO SPRING	
203	3-068-479-01	CAP, CAPACITOR	
204	3-070-014-01	SPRING, PRE OPEN	
205	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION	
206	1-476-675-11	SWITCH BLOCK, CONTROL (ZK-503)	
207	3-068-454-01	SHEET METAL (R), STRAP	
208	3-068-457-01	SHAFT, STRAP	
209	3-056-559-11	SCREW (M1.7), 0 PART-NO. P2	
210	1-657-785-11	FP-248 FLEXIBLE BOARD (DEW SENSOR)	

Ref. No.	Part No.	Description	Remarks
211	1-961-144-11	HARNESS (FS-140)	
212	3-068-496-01	PIN (DIA. 3), PARALLEL	
213	3-068-450-01	COVER (CD), FLEXIBLE	
214	3-068-497-01	COVER, PARALLEL PIN	
215	3-068-453-01	RETAINER, SPEAKER	
216	1-961-141-11	HARNESS (FS-136)	
217	1-681-546-11	FP-362 FLEXIBLE BOARD	
218	A-7074-835-A	FS-83 BOARD, COMPLETE	
J901	1-794-045-11	CONNECTOR, DC-IN	
SP901	1-544-839-11	SPEAKER (1.6 CM)	

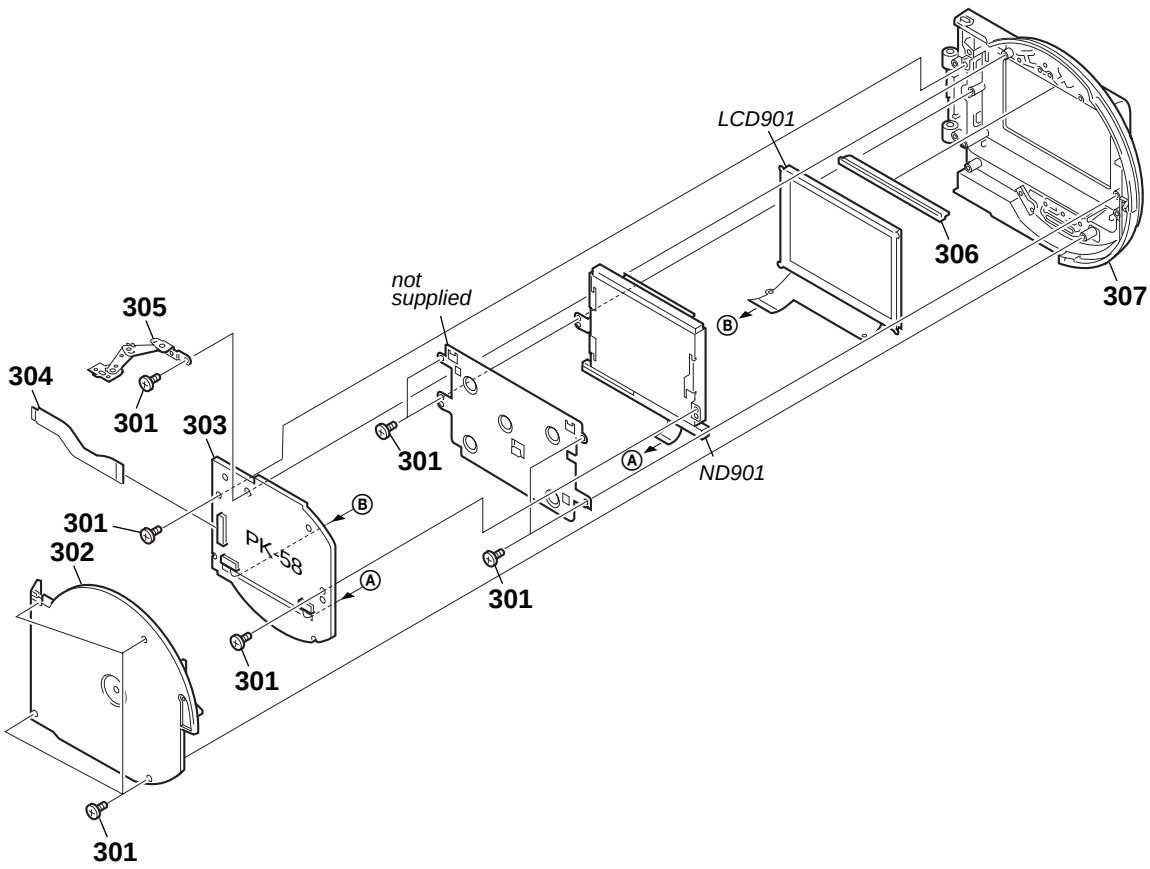
6-1-6. CABINET (REAR) SECTION-2



Ref. No.	Part No.	Description	Remarks
251	3-068-467-01	SPRING, CD OPENER	
252	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION	
253	3-068-470-01	COVER, SOLENOID	
254	3-068-469-01	SPRING, CD LOCK LEVER	
255	3-068-468-01	LEVER, CD LOCK	
256	3-703-357-03	PIN, PARALLEL (DIA. 1.6X6)	
257	1-961-142-11	HARNESS (FS-138)	
258	3-068-481-01	COVER, ST LOCK	
259	3-068-427-01	SPRING, CD LOCK	
260	3-649-266-01	PIN, PARALLEL	
261	3-068-428-01	SLIDER, CD LOCK	
262	3-068-423-01	SPRING, POWER	
263	3-068-422-01	KNOB, POWER	
264	3-068-493-01	RING, SLIDER	
265	3-068-625-01	SPRING, FRICTION	
266	3-068-597-01	GRIP (M1.4), EG	
267	3-068-623-01	PLATE, CLICK	
268	3-068-619-01	BASE, DIAL	
269	3-068-420-01	KNOB, MODE (CD300)	

Ref. No.	Part No.	Description	Remarks
269	3-068-536-01	KNOB (M), MODE (CD200)	
* 270	3-064-250-01	SPRING, F BUTTON	
271	3-067-942-01	BUTTON, FUNCTION (CD300)	
271	3-067-942-11	BUTTON, FUNCTION (CD200)	
272	3-068-424-01	COVER, DC	
273	X-3951-648-1	OPENER ASSY, CD (CD300)	
273	X-3951-656-1	OPENER ASSY, CD (CD200)	
274	3-067-941-01	COVER, JK (CD300)	
274	3-067-941-11	COVER, JK (CD200)	
275	1-961-143-11	HARNESS (FS-139)	
276	3-068-455-01	SHEET METAL (L), STRAP	
277	3-065-177-01	SCREW (1.7X3)	
278	3-068-421-01	RETAINER, MODE KNOB	
279	3-068-401-01	HEAD (M1.7),0 PART-NO. SPECIAL	
280	X-3951-643-1	CABINET (REAR) ASSY (CD300)	
280	X-3951-653-1	CABINET (REAR) ASSY (CD200)	
PL901	1-454-674-51	SOLENOID, PLUNGER (STOROBO PLUNGER)	
PL902	1-454-988-11	SOLENOID, PLUNGER (DOOR LOCK PLUNGER)	

6-1-7. LID CD SECTION



Ref. No.	Part No.	Description	Remarks
301	3-914-366-01	SCREW (DIA. 1.7X4), PRECISION	
302	3-068-459-01	LID, CD REAR	
303	A-7074-838-A	PK-58 (SH) BOARD, COMPLETE	
304	1-681-547-11	FP-363 FLEXIBLE BOARD	
305	X-3951-645-1	STAY ASSY, UPPER	
306	3-068-458-01	WINDOW, SOLAR	

Ref. No.	Part No.	Description	Remarks
307	X-3951-644-1	LID ASSY, CD (CD300)	
307	X-3951-654-1	LID ASSY, CD (CD200)	
LCD901	1-803-858-22	INDICATOR MODULE LIQUID CRYSTAL (LQ25A3FR30) (SERVICE)	
⚠ND901	1-517-787-71	TUBE, FLUORESCENT,COLD CATHODE	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...
- Abbreviation
  CND : Canadian model.
  HK : Hong Kong model.
  AUS : Australian model.
  CN : Chinese model.
  KR : Korea model.
  J : Japanese model.

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
	A-7074-840-A	CD-334 BOARD, COMPLETE (CD300)			
		**********			
	A-7074-843-A	CD-333 BOARD, COMPLETE (CD200)			
		**********			
					(Ref.No.;1000 Series)
		(IC101 and IC401 are not included in this COMPLETE BOARD)			
		< CAPACITOR >			
C101	1-107-690-11	TANTAL. CHIP	6.8uF	20%	35V (CD200)
C102	1-125-827-91	CERAMIC CHIP	1uF	10%	25V (CD200)
C103	1-119-751-11	TANTAL. CHIP	22uF	20%	16V (CD200)
C104	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (CD200)
C105	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V (CD200)
C106	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (CD200)
C107	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V (CD200)
C108	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (CD200)
C109	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (CD200)
C111	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	16V (CD200)
C201	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C202	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C203	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C204	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C205	1-164-876-11	CERAMIC CHIP	120PF	5%	16V (CD300)
C206	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C208	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C209	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C210	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C211	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C212	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C213	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C214	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C215	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C216	1-164-876-11	CERAMIC CHIP	120PF	5%	16V (CD300)
C217	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C218	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C219	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C220	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C221	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C222	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C223	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C224	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C225	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C226	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C227	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C228	1-107-690-11	TANTAL. CHIP	6.8uF	20%	35V
C229	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C230	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C231	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C302	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V (CD200)
C303	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (CD200)
C304	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V (CD200)
C305	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V (CD200)
C306	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V (CD200)
C307	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C308	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C309	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C310	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C311	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C312	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (CD200)
C313	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V (CD200)
C314	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V (CD200)
C316	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (CD200)
C317	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (CD200)
C318	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (CD200)
C319	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V (CD200)
C320	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (CD200)
C321	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V (CD200)
C322	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

Ref. No.	Part No.	Description			Remarks
C323	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C401	1-107-690-11	TANTAL. CHIP	6.8uF	20.00%	35V (CD300)
C402	1-119-751-11	TANTAL. CHIP	22uF	20%	16V (CD300)
C403	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (CD300)
C404	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V (CD300)
C405	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V (CD300)
C407	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (CD300)
C408	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V (CD300)
C409	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	16V (CD300)
C412	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V (CD300)
C413	1-125-827-91	CERAMIC CHIP	1uF	10%	25V (CD300)
		< CONNECTOR >			
CN203	1-785-482-41	CONNECTOR, BOARD TO BOARD 70P			
* CN301	1-784-178-11	CONNECTOR, FFC (ZIF) 26P (CD200)			
CN302	1-766-336-21	CONNECTOR, FFC/FPC 6P (CD300)			
CN303	1-573-356-21	CONNECTOR, FFC/FPC 16P (CD300)			
		< DIODE >			
D101	8-719-073-01	DIODE MA111-(K8).S0 (CD200)			
D301	8-719-073-01	DIODE MA111-(K8).S0 (CD200)			
D302	8-719-075-62	DIODE 1SS401(TE85L) (CD200)			
D401	8-719-073-01	DIODE MA111-(K8).S0 (CD300)			
		< FERRITE BEAD >			
FB101	1-414-228-11	FERRITE	0uH		
FB201	1-216-797-11	METAL CHIP	10	5%	1/16W (CD300)
* FB201	1-500-282-11	FERRITE	0uH (CD200)		
FB202	1-414-228-11	FERRITE	0uH (CD300)		
FB203	1-500-283-11	FERRITE	0uH		
FB205	1-216-797-11	METAL CHIP	10	5%	1/16W (CD300)
* FB205	1-500-282-11	FERRITE	0uH (CD200)		
FB206	1-500-283-11	FERRITE	0uH		
FB208	1-500-284-21	FERRITE	0uH		
FB209	1-414-228-11	FERRITE	0uH		
FB210	1-414-228-11	FERRITE	0uH		
FB211	1-414-229-11	FERRITE	0uH		
FB212	1-414-229-11	FERRITE	0uH		
FB213	1-414-229-11	FERRITE	0uH		
FB214	1-414-229-11	FERRITE	0uH		
FB215	1-414-229-11	FERRITE	0uH		
FB216	1-414-229-11	FERRITE	0uH		
FB217	1-414-229-11	FERRITE	0uH		
FB218	1-414-229-11	FERRITE	0uH		
FB219	1-414-229-11	FERRITE	0uH		

Ref. No.	Part No.	Description			Remarks
FB220	1-414-229-11	FERRITE	0uH		
FB221	1-414-229-11	FERRITE	0uH		
FB222	1-414-229-11	FERRITE	0uH		
FB223	1-414-229-11	FERRITE	0uH		
FB224	1-414-229-11	FERRITE	0uH		
FB225	1-218-990-11	SHORT	0		
FB226	1-218-990-11	SHORT	0		
FB301	1-216-864-11	METAL CHIP	0	5%	1/16W (CD300)
FB302	1-216-864-11	METAL CHIP	0	5%	1/16W (CD300)
FB303	1-216-864-11	METAL CHIP	0	5%	1/16W (CD300)
FB304	1-216-864-11	METAL CHIP	0	5%	1/16W (CD300)
FB305	1-216-864-11	METAL CHIP	0	5%	1/16W (CD300)
FB306	1-216-864-11	METAL CHIP	0	5%	1/16W (CD300)
FB307	1-216-864-11	METAL CHIP	0	5%	1/16W (CD300)
FB308	1-216-864-11	METAL CHIP	0	5%	1/16W (CD300)
FB401	1-414-228-11	FERRITE	0uH (CD300)		
		< IC >			
IC101	A-7031-236-A	CCD BLOCK ASSY (CCD IMAGER) (CD200)			
IC201	8-752-397-43	IC CXD2470R-T4 (CD200)			
IC201	8-752-404-95	IC CXD2497R-T4 (CD300)			
IC202	6-700-042-01	IC AD80044JSTRL			
IC301	8-759-637-96	IC uPD16877MA-6A5-E2			
IC302	8-759-637-96	IC uPD16877MA-6A5-E2			
IC303	8-759-693-13	IC NJM12904V(TE2) (CD200)			
IC304	8-759-681-42	IC NJM12902V(TE2) (CD200)			
IC401	A-7031-268-A	CCD BLOCK ASSY (CCD IMAGER) (CD300)			
		< COIL >			
L101	1-469-528-91	INDUCTOR	100uH (CD200)		
L201	1-414-756-11	INDUCTOR	47uH (CD300)		
L202	1-414-756-11	INDUCTOR	47uH		
L203	1-414-754-11	INDUCTOR	10uH (CD200)		
L203	1-414-756-11	INDUCTOR	47uH (CD300)		
L301	1-412-951-11	INDUCTOR	10uH		
L302	1-414-398-11	INDUCTOR	10uH		
L303	1-412-951-11	INDUCTOR	10uH		
L304	1-412-951-11	INDUCTOR	10uH (CD200)		
L401	1-469-528-91	INDUCTOR	100uH (CD300)		
		< TRANSISTOR >			
Q101	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO (CD200)		
Q102	8-729-117-73	TRANSISTOR	2SC4178-F13F14-T1(CD200)		
Q301	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO (CD200)		
Q302	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO		
Q303	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO (CD200)		
Q401	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO (CD300)		
Q402	8-729-117-73	TRANSISTOR	2SC4178-F13F14-T1(CD300)		

Be sure to read “Precautions Upon Replacing CCD Imager” on pages 4-15 (CD200) and 4-16 (CD300) when changing the CCD imager.

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R101	1-218-977-11	RES-CHIP	100K	5%	1/16W (CD200)
R102	1-218-931-11	RES-CHIP	15	5%	1/16W (CD200)
R103	1-218-931-11	RES-CHIP	15	5%	1/16W (CD200)
R104	1-218-939-11	RES-CHIP	68	5%	1/16W (CD200)
R105	1-218-957-11	RES-CHIP	2.2K	5%	1/16W (CD200)
R106	1-208-643-11	RES-CHIP	22	5%	1/16W (CD200)
R107	1-218-981-11	RES-CHIP	220K	5%	1/16W (CD200)
R108	1-218-961-11	RES-CHIP	4.7K	5%	1/16W (CD200)
R201	1-216-864-11	METAL CHIP	0	5%	1/16W (CD200)
R202	1-218-941-11	RES-CHIP	100	5%	1/16W
R203	1-218-941-11	RES-CHIP	100	5%	1/16W (CD300)
R203	1-218-945-11	RES-CHIP	220	5%	1/16W (CD200)
R206	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R207	1-218-941-11	RES-CHIP	100	5%	1/16W
R211	1-218-953-11	RES-CHIP	1K	5%	1/16W
R212	1-218-945-11	RES-CHIP	220	5%	1/16W
R214	1-218-945-11	RES-CHIP	220	5%	1/16W
R216	1-218-990-11	SHORT	0 (CD200)		
R217	1-218-990-11	SHORT	0 (CD200)		
R219	1-218-977-11	RES-CHIP	100K	5%	1/16W
R221	1-218-943-11	RES-CHIP	150	5%	1/16W
R222	1-218-943-11	RES-CHIP	150	5%	1/16W
R223	1-218-943-11	RES-CHIP	150	5%	1/16W
R224	1-218-943-11	RES-CHIP	150	5%	1/16W
R225	1-218-943-11	RES-CHIP	150	5%	1/16W
R226	1-218-943-11	RES-CHIP	150	5%	1/16W
R227	1-218-943-11	RES-CHIP	150	5%	1/16W
R228	1-218-943-11	RES-CHIP	150	5%	1/16W
R229	1-218-943-11	RES-CHIP	150	5%	1/16W
R230	1-218-943-11	RES-CHIP	150	5%	1/16W
R231	1-218-943-11	RES-CHIP	150	5%	1/16W
R232	1-218-943-11	RES-CHIP	150	5%	1/16W
R233	1-218-943-11	RES-CHIP	150	5%	1/16W
R234	1-218-943-11	RES-CHIP	150	5%	1/16W
R239	1-218-953-11	RES-CHIP	1K	5%	1/16W
R240	1-218-953-11	RES-CHIP	1K	5%	1/16W
R241	1-218-953-11	RES-CHIP	1K	5%	1/16W
R242	1-218-990-11	SHORT	0		
R244	1-208-635-11	RES-CHIP	10	5%	1/16W
R246	1-218-990-11	SHORT	0 (CD300)		
R247	1-218-990-11	SHORT	0 (CD200)		
R250	1-218-953-11	RES-CHIP	1K	5%	1/16W
R303	1-216-797-11	METAL CHIP	10	5%	1/16W (CD200)
R304	1-218-953-11	RES-CHIP	1K	5%	1/16W (CD200)
R305	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R306	1-218-961-11	RES-CHIP	4.7K	5%	1/16W (CD200)
R307	1-218-977-11	RES-CHIP	100K	5%	1/16W (CD200)
R308	1-218-965-11	RES-CHIP	10K	5%	1/16W (CD200)
R309	1-218-977-11	RES-CHIP	100K	5%	1/16W (CD200)
R310	1-218-974-11	RES-CHIP	56K	5%	1/16W (CD300)
R311	1-218-975-11	RES-CHIP	68K	5%	1/16W (CD200)
R312	1-218-973-11	RES-CHIP	47K	5%	1/16W (CD200)
R313	1-218-974-11	RES-CHIP	56K	5%	1/16W (CD300)
R314	1-218-947-11	RES-CHIP	330	5%	1/16W (CD200)
R315	1-218-973-11	RES-CHIP	47K	5%	1/16W (CD200)
R316	1-218-980-11	RES-CHIP	180K	5%	1/16W (CD200)
R317	1-218-975-11	RES-CHIP	68K	5%	1/16W (CD200)
R318	1-218-980-11	RES-CHIP	180K	5%	1/16W (CD200)
R319	1-218-969-11	RES-CHIP	22K	5%	1/16W (CD200)
R320	1-218-958-11	RES-CHIP	2.7K	5%	1/16W (CD200)
R321	1-218-954-11	RES-CHIP	1.2K	5%	1/16W (CD200)
R322	1-218-966-11	RES-CHIP	12K	5%	1/16W (CD200)
R323	1-218-980-11	RES-CHIP	180K	5%	1/16W (CD200)
R324	1-208-712-11	METAL CHIP	16K	0.5%	1/16W (CD200)
R325	1-208-683-11	METAL CHIP	1K	0.5%	1/16W (CD200)
R326	1-218-969-11	RES-CHIP	22K	5%	1/16W (CD200)
R327	1-218-977-11	RES-CHIP	100K	5%	1/16W (CD200)
R328	1-218-977-11	RES-CHIP	100K	5%	1/16W (CD200)
R329	1-218-965-11	RES-CHIP	10K	5%	1/16W (CD200)
R330	1-218-957-11	RES-CHIP	2.2K	5%	1/16W (CD200)
R332	1-218-973-11	RES-CHIP	47K	5%	1/16W
R333	1-218-944-11	RES-CHIP	180	5%	1/16W (CD300)
R334	1-218-944-11	RES-CHIP	180	5%	1/16W (CD300)
R335	1-218-990-11	SHORT	0		
R336	1-218-990-11	SHORT	0		
R401	1-218-990-11	SHORT	0	(CD300)	
R402	1-218-990-11	SHORT	0	(CD300)	
R403	1-218-958-11	RES-CHIP	2.7K	5%	1/16W (CD300)
R404	1-218-989-11	RES-CHIP	1M	5%	1/16W (CD300)
R406	1-218-939-11	RES-CHIP	68	5%	1/16W (CD300)

Ref. No.	Part No.	Description			Remarks
R407	1-218-961-11	RES-CHIP	4.7K	5%	1/16W (CD300)
R409	1-218-977-11	RES-CHIP	100K	5%	1/16W (CD300)
R413	1-218-937-11	RES-CHIP	47	5%	1/16W (CD300)
		< THERMISTOR >			
TH301	1-809-361-21	THERMISTOR (2125)			
	A-7074-835-A	FS-83 BOARD, COMPLETE ********** (Ref.No.;1000 Series)			
		< CAPACITOR >			
C004	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
		< CONNECTOR >			
CN001	1-691-349-11	CONNECTOR, FFC/FPC (ZIF) 11P			
* CN002	1-580-056-21	PIN, CONNECTOR (SMD) 3P			
* CN003	1-580-056-21	PIN, CONNECTOR (SMD) 3P			
CN004	1-785-283-21	PIN, CONNECTOR (PC BOARD) 14P			
		< DIODE >			
D002	8-719-075-15	DIODE MAZT082H08S0			
D003	8-719-075-15	DIODE MAZT082H08S0			
D004	8-719-070-95	DIODE TLGU1008(T05,SOY)			
D006	8-719-158-49	DIODE MA8120-TX			
D007	8-719-027-76	DIODE 1SS357-TPH3			
		< FUSE >			
⚠F001	1-576-406-21	FUSE, MICRO	1.4A 32V	(1608)	
⚠F002	1-576-406-21	FUSE, MICRO	1.4A 32V	(1608)	
⚠F003	1-576-406-21	FUSE, MICRO	1.4A 32V	(1608)	
⚠F004	1-576-406-21	FUSE, MICRO	1.4A 32V	(1608)	
⚠F005	1-576-406-21	FUSE, MICRO	1.4A 32V	(1608)	
⚠F006	1-576-406-21	FUSE, MICRO	1.4A 32V	(1608)	
		< FERRITE BEAD >			
FB001	1-414-228-11	FERRITE	0uH		
FB002	1-414-228-11	FERRITE	0uH		
		< LINE FILTER >			
LF001	1-411-957-11	FILTER, COMMON MODE			
		< TRANSISTOR >			
Q001	8-729-047-68	TRANSISTOR	SSM3K03FE(TPL3)		
Q002	8-729-051-49	TRANSISTOR	TPC8305(TE12L)		
Q003	8-729-804-41	TRANSISTOR	2SB1122-ST-TD		
Q004	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
		< RESISTOR >			
R004	1-218-953-11	RES-CHIP	1K	5%	1/16W
R005	1-218-944-11	RES-CHIP	180	5%	1/16W
R006	1-216-295-91	SHORT	0		
R007	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R008	1-218-985-11	RES-CHIP	470K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R009	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R010	1-218-989-11	RES-CHIP	1M	5%	1/16W
R011	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R012	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R013	1-216-150-91	RES-CHIP	10	5%	1/8W
R014	1-218-953-11	RES-CHIP	1K	5%	1/16W
R015	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R016	1-218-973-11	RES-CHIP	47K	5%	1/16W
R017	1-218-985-11	RES-CHIP	470K	5%	1/16W
		< SWITCH >			
S001	1-786-039-21	SWITCH, TACTILE (FLASH/MACRO/SELF TIMER/EDIT SEARCH)			
S002	1-771-138-82	SWITCH, KEY BOARD (MENU)			
	A-7074-836-A	JK-208 BOARD, COMPLETE ********** (Ref.No.;2000 Series)			
BT101	1-756-191-11	BATTERY, LITHIUM (SECONDARY)			
		< CAPACITOR >			
C101	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C104	1-216-864-11	METAL CHIP	0	5%	1/16W
C107	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C108	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
		< CONNECTOR >			
CN101	1-784-421-11	CONNECTOR, FFC/FPC (ZIF) 27P			
CN102	1-794-962-11	CONNECTOR, SQUARE TYPE(USB 5P) (USB)			
		< DIODE >			
D102	8-719-075-15	DIODE MAZT082H08S0			
D103	8-719-075-15	DIODE MAZT082H08S0			
D104	8-719-075-15	DIODE MAZT082H08S0			
D105	8-719-075-15	DIODE MAZT082H08S0			
D106	8-719-075-15	DIODE MAZT082H08S0			
D108	8-719-075-15	DIODE MAZT082H08S0			
D109	8-719-075-15	DIODE MAZT082H08S0			
D110	8-719-075-15	DIODE MAZT082H08S0			
D111	8-719-073-01	DIODE MA111-(K8).S0			
D112	8-719-073-01	DIODE MA111-(K8).S0			
D113	8-719-075-15	DIODE MAZT082H08S0			
D114	8-719-075-15	DIODE MAZT082H08S0			
		< FERRITE BEAD >			
FB101	1-414-233-22	FERRITE	0uH		
FB102	1-500-284-21	FERRITE	0uH		
FB103	1-500-284-21	FERRITE	0uH		
FB104	1-500-284-21	FERRITE	0uH		
FB105	1-500-284-21	FERRITE	0uH		
FB106	1-469-324-21	FERRITE	0uH		
FB107	1-500-284-21	FERRITE	0uH		
FB108	1-500-284-21	FERRITE	0uH		
FB109	1-216-295-91	SHORT	0		
FB110	1-469-084-21	FERRITE	1MH		

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
FB111	1-469-084-21	FERRITE	1MH		
FB112	1-469-084-21	FERRITE	1MH		
		< IC >			
IC101	8-759-657-69	IC PDIUSBP11APW,118			
		< JACK >			
J101	1-793-995-21	JACK, SUPER SMALL TYPE (ACC)			
J102	1-569-950-31	JACK (SMALL TYPE) (A/V OUT (MONO))			
		< LINE FILTER >			
LF101	1-419-100-21	INDUCTOR	0uH		
LF102	1-419-100-21	INDUCTOR	0uH		
		< TRANSISTOR >			
Q101	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q102	8-729-037-61	TRANSISTOR	UN9113J-(K8).SO		
Q103	8-729-037-61	TRANSISTOR	UN9113J-(K8).SO		
		< RESISTOR >			
R103	1-218-977-11	RES-CHIP	100K	5%	1/16W
R104	1-218-989-11	RES-CHIP	1M	5%	1/16W
R105	1-220-168-11	RES-CHIP	24	5%	1/16W
R106	1-220-168-11	RES-CHIP	24	5%	1/16W
R107	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R108	1-218-983-11	RES-CHIP	330K	5%	1/16W
R109	1-218-985-11	RES-CHIP	470K	5%	1/16W
R110	1-216-849-11	METAL CHIP	220K	5%	1/16W
R111	1-216-821-11	METAL CHIP	1K	5%	1/16W
R112	1-216-864-11	METAL CHIP	0	5%	1/16W
R113	1-218-935-11	RES-CHIP	33	5%	1/16W
R114	1-218-989-11	RES-CHIP	1M	5%	1/16W
R115	1-218-953-11	RES-CHIP	1K	5%	1/16W
		< SWITCH >			
S101	1-762-805-21	SWITCH, PUSH (1 KEY) (OPEN/CLOSE)			
S103	1-762-805-21	SWITCH, PUSH (1 KEY) (OPEN/CLOSE)			

Ref. No.	Part No.	Description	Remarks
	A-7074-899-A	MD-083 BOARD, COMPLETE (SERVICE)	
		**********	
		(Ref.No.;3000 Series)	
	A-7074-898-A	SY-67 (300) BOARD, COMPLETE (SERVICE) (CD300)	
		**********	
	A-7074-900-A	SY-67 (200) BOARD, COMPLETE (SERVICE) (CD200)	
		**********	
		(Ref.No.;5000 Series)	

Electrical parts list of the MD-083 and SY-67 boards are not shown.
Pages from 6-14 to 6-24 are not shown.

Ref. No.	Part No.	Description			Remarks
	A-7074-838-A	PK-58 (SH) BOARD, COMPLETE			
		**********			
					(Ref.No.;4000 Series)
		< CAPACITOR >			
C201	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C202	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C203	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C204	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C205	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C206	1-164-856-81	CERAMIC CHIP	18PF	5%	16V
C207	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C208	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C209	1-164-860-11	CERAMIC CHIP	27PF	5%	16V
C211	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C212	1-115-156-11	CERAMIC CHIP	1uF		10V
C213	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C214	1-164-657-11	CERAMIC CHIP	0.015uF	10%	50V
C215	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
⚠C216	1-131-959-91	CERAMIC CHIP	12PF	10%	3KV
C301	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C302	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C303	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C304	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C305	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C306	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C307	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C308	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C309	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C310	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C311	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C312	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C313	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C314	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C315	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C316	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C402	1-113-986-11	TANTAL. CHIP	2.2uF	20%	25V
C403	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C404	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C405	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C406	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C407	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C408	1-164-872-11	CERAMIC CHIP	82PF	5%	16V
C409	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C411	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C412	1-164-872-11	CERAMIC CHIP	82PF	5%	16V
C413	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C414	1-113-994-11	TANTAL. CHIP	6.8uF	20%	16V
C415	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C416	1-164-346-11	CERAMIC CHIP	1uF		16V
C417	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C418	1-164-346-11	CERAMIC CHIP	1uF		6V
		< CONNECTOR >			
CN201	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P			
CN301	1-770-742-21	CONNECTOR, FFC/FPC 32P			
CN302	1-766-348-21	CONNECTOR, FFC/FPC 18P			
* CN401	1-774-261-11	CONNECTOR, FFC (ZIF) 24P			

Ref. No.	Part No.	Description			Remarks
		< DIODE >			
D202	8-719-073-01	DIODE MA111-(K8).S0			
D301	8-719-075-15	DIODE MAZT082H08S0			
D302	8-719-070-91	DIODE TLSU1008(T05,SOY)			
D303	8-719-016-74	DIODE 1SS352-TPH3			
D304	8-719-070-93	DIODE TLAU1008(T05,SOY)			
D401	8-719-084-47	DIODE 1SV290(TPL3)			
D402	8-719-976-96	DIODE MA8047-H-TX			
		< FERRITE BEAD >			
FB301	1-414-234-22	FERRITE	0uH		
FB302	1-414-234-22	FERRITE	0uH		
FB303	1-414-234-22	FERRITE	0uH		
		< IC >			
IC201	8-759-521-35	IC TL5001CDR			
IC202	8-759-710-82	IC NJM2406F-TE2			
IC301	8-759-364-05	IC MB40D001PFV-G-BND-ER			
IC302	8-759-539-27	IC IR3Y37A4			
IC401	8-759-587-61	IC LZ9GH234			
IC402	8-759-327-01	IC NJM062V(TE2)			
		< COIL >			
L201	1-414-753-91	INDUCTOR	4.7uH		
L202	1-424-674-11	INDUCTOR	22uH		
L203	1-419-387-21	INDUCTOR	100uH		
L301	1-469-528-91	INDUCTOR	100uH		
L302	1-469-525-91	INDUCTOR	10uH		
L401	1-469-525-91	INDUCTOR	10uH		
L402	1-469-525-91	INDUCTOR	10uH		
L403	1-469-525-91	INDUCTOR	10uH		
L405	1-412-949-21	INDUCTOR	6.8uH		
		< TRANSISTOR >			
Q201	8-729-042-72	TRANSISTOR	UN9214J-(K8).SO		
Q202	8-729-042-59	TRANSISTOR	UN9112J-(K8).SO		
Q203	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q204	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q205	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q206	8-729-823-84	TRANSISTOR	FP102-TL		
Q207	8-729-053-52	TRANSISTOR	HN1C01FE-Y/GR(TPLR3)		
Q208	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q209	8-729-039-43	TRANSISTOR	FP216-TL		
Q210	8-729-042-59	TRANSISTOR	UN9112J-(K8).SO		
Q301	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q401	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q402	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO		
Q403	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q404	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO		
		< RESISTOR >			
R203	1-208-703-11	METAL CHIP	6.8K	0.5%	1/16W
R204	1-218-970-11	METAL CHIP	27K	0.5%	1/16W
R205	1-218-978-11	METAL CHIP	120K	0.5%	1/16W
R206	1-218-950-11	RES-CHIP	560	5%	1/16W
R207	1-218-969-11	RES-CHIP	22K	5%	1/16W

Note :
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Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
R208	1-218-950-11	RES-CHIP	560	5%	1/16W
R209	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R210	1-208-707-11	METAL CHIP	10K	0.5%	1/16W
R211	1-208-689-11	METAL CHIP	1.8K	0.5%	1/16W
R212	1-208-695-11	METAL CHIP	3.3K	0.5%	1/16W
R213	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R214	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R215	1-218-973-11	RES-CHIP	47K	5%	1/16W
R216	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R217	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R218	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R219	1-218-977-11	RES-CHIP	100K	5%	1/16W
R220	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R221	1-218-969-11	RES-CHIP	22K	5%	1/16W
R222	1-218-949-11	RES-CHIP	470	5%	1/16W
R223	1-218-942-11	RES-CHIP	120	5%	1/16W
R303	1-218-951-11	RES-CHIP	680	5%	1/16W
R304	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R306	1-218-969-11	RES-CHIP	22K	5%	1/16W
R307	1-218-949-11	RES-CHIP	470	5%	1/16W
R308	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R309	1-218-963-11	RES-CHIP	6.8K	5%	1/16W
R310	1-218-990-11	SHORT	0		
R311	1-218-969-11	RES-CHIP	22K	5%	1/16W
R312	1-218-966-11	RES-CHIP	12K	5%	1/16W
R313	1-218-973-11	RES-CHIP	47K	5%	1/16W
R316	1-218-967-11	RES-CHIP	15K	5%	1/16W
R317	1-218-971-11	RES-CHIP	33K	5%	1/16W
R318	1-218-966-11	RES-CHIP	12K	5%	1/16W
R319	1-218-972-11	RES-CHIP	39K	5%	1/16W
R320	1-218-977-11	RES-CHIP	100K	5%	1/16W
R321	1-218-965-11	RES-CHIP	10K	5%	1/16W
R322	1-218-985-11	RES-CHIP	470K	5%	1/16W
R323	1-218-985-11	RES-CHIP	470K	5%	1/16W
R403	1-218-990-11	SHORT	0		
R404	1-218-973-11	RES-CHIP	47K	5%	1/16W
R405	1-218-973-11	RES-CHIP	47K	5%	1/16W
R408	1-218-987-11	RES-CHIP	680K	5%	1/16W
R409	1-218-978-11	RES-CHIP	120K	5%	1/16W
R410	1-218-977-11	RES-CHIP	100K	5%	1/16W
R411	1-218-965-11	RES-CHIP	10K	5%	1/16W
R412	1-218-989-11	RES-CHIP	1M	5%	1/16W
R414	1-218-989-11	RES-CHIP	1M	5%	1/16W
R415	1-218-969-11	RES-CHIP	22K	5%	1/16W
R416	1-218-975-11	RES-CHIP	68K	5%	1/16W
R417	1-218-975-11	RES-CHIP	68K	5%	1/16W
R418	1-218-973-11	RES-CHIP	47K	5%	1/16W
R419	1-208-931-11	METAL CHIP	68K	0.5%	1/16W
R420	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R421	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R422	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R425	1-218-977-11	RES-CHIP	100K	5%	1/16W
R426	1-218-971-11	RES-CHIP	33K	5%	1/16W
R427	1-218-990-11	SHORT	0		
R428	1-218-977-11	RES-CHIP	100K	5%	1/16W
R429	1-218-977-11	RES-CHIP	100K	5%	1/16W
R432	1-218-977-11	RES-CHIP	100K	5%	1/16W
R433	1-218-971-11	RES-CHIP	33K	5%	1/16W
R434	1-218-990-11	SHORT	0		
R435	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R436	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R437	1-208-719-11	METAL CHIP	33K	0.5%	1/16W
R438	1-208-715-11	METAL CHIP	22K	0.5%	1/16W
R440	1-218-990-11	SHORT	0		
R442	1-218-990-11	SHORT	0		
R444	1-218-990-11	SHORT	0		
R445	1-218-990-11	SHORT	0		
R446	1-218-990-11	SHORT	0		
R447	1-218-990-11	SHORT	0		
R448	1-218-990-11	SHORT	0		
R449	1-218-990-11	SHORT	0		
R455	1-218-990-11	SHORT	0		
R458	1-218-990-11	SHORT	0		
R459	1-218-990-11	SHORT	0		
R461	1-218-937-11	RES-CHIP	47	5%	1/16W
R462	1-218-937-11	RES-CHIP	47	5%	1/16W
R463	1-218-937-11	RES-CHIP	47	5%	1/16W
R467	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
		< SWITCH >			
S301	1-771-138-82	SWITCH, KEY BOARD (DISPLAY)			
S303	1-771-138-82	SWITCH, KEY BOARD (AE LOCK)			
S304	1-771-138-82	SWITCH, KEY BOARD (SPOT METER)			
S305	1-692-088-11	SWITCH, TACTILE (RESET)			
S306	1-771-138-82	SWITCH, KEY BOARD (EXPOSURE)			
S307	1-771-138-82	SWITCH, KEY BOARD (FOCUS)			
		< TRANSFORMER >			
⚠T201	1-435-227-11	TRANSFORMER, INVERTER			
	A-7074-837-A	TK-61 BOARD, COMPLETE (CD300)			
		**********			
	A-7074-907-A	TK-61 (200) BOARD, COMPLETE (CD200)			
		**********			
		(Ref.No.;6000 Series)			
		< CONNECTOR >			
CN501	1-766-335-21	CONNECTOR, FFC/FPC 5P			
CN503	1-766-335-21	CONNECTOR, FFC/FPC 5P			
		< TRANSISTOR >			
Q501	8-729-427-72	TRANSISTOR	HN1C01FU-TE85R		
		< RESISTOR >			
R502	1-218-969-11	RES-CHIP	22K	5%	1/16W
R503	1-218-990-11	SHORT	0		
R504	1-218-990-11	SHORT	0		
R506	1-218-940-11	RES-CHIP	82	5%	1/16W
R507	1-218-953-11	RES-CHIP	1K	5%	1/16W
R508	1-218-965-11	RES-CHIP	10K	5%	1/16W
R509	1-218-965-11	RES-CHIP	10K	5%	1/16W
R510	1-218-942-11	RES-CHIP	120	5%	1/16W
R511	1-218-990-11	SHORT	0		
R512	1-218-990-11	SHORT	0		

Note :
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Note :
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Ref. No.	Part No.	Description	Remarks
		< SWITCH >	
S502	1-771-331-81	SWITCH, PUSH (1 KEY) (LENS CAP DETECT)	(CD300)
		ACCESSORIES	
		**********	
⚠	1-475-599-11	ADAPTOR, AC (L10A)	(CD200:US,CND,AEP,UK,AUS,JE,HK,J,E/ CD300:US,CND,AEP,UK,AUS,JE,HK,J,E)
⚠	1-475-599-71	ADAPTOR, AC (L10A) (CD200:KR/CD300:KR)	
⚠	1-475-599-81	ADAPTOR, AC (L10B) (CD200:CN/CD300:CN)	
	1-543-798-11	FILTER, CLAMP (FERRITE CORE)	
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P	(CD200:JE/CD300:JE)
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P	(CD200:E,HK/CD300:E,HK)
⚠	1-696-819-11	CORD, POWER (CD200:AUS/CD300:AUS)	
	1-757-293-31	CORD, CONNECTION (USB 5P)	
⚠	1-769-608-11	CORD, POWER (CD200:AEP,E/CD300:AEP,E)	
⚠	1-776-985-11	CORD, POWER (CD200:KR/CD300:KR)	
⚠	1-782-476-11	CORD, POWER (CD200:CN/CD300:CN)	
⚠	1-783-374-11	CORD, POWER (CD200:UK,HK/CD300:UK,HK)	
	1-783-738-31	CORD, CONNECTION (AV CABLE)(1.5m)	
⚠	1-790-073-11	CORD, POWER 2P (CD200:JE,J/CD300:JE,J)	
⚠	1-790-107-22	CORD, POWER	(CD200:US,CND/CD300:US,CND)
	3-062-875-01	INSTRUCTION (FOR SAFETY)	(CD200:J/CD300:J)
	3-063-085-01	ADAPTOR, D (8cm CD)	
	3-066-676-01	SPVD-004 (P)(CD-ROM)(USB DRIVER)	(CD200:AEP,UK,AUS,CN,E,JE,HK,KR/ CD300:AEP,UK,AUS,CN,E,JE,HK,KR)
	3-066-677-01	SPVD-004 (I)(CD-ROM)(USB DRIVER)	(CD200:US,CND,J/CD300:US,CND,J)
	3-067-797-01	STRING (T), CAP (CD300)	
	3-067-951-01	MANUAL,INSTRUCTION (JAPANESE)	(CD200:J/CD300:J)
	3-067-951-11	MANUAL,INSTRUCTION (ENGLISH)	(CD200:US,CND,AEP,UK,AUS,CN,E,JE,HK/ CD300:US,CND,AEP,UK,AUS,CN,E,JE,HK)
	3-067-951-21	MANUAL,INSTRUCTION (FRENCH/GERMAN)	(CD200:CND,AEP,JE/CD300:CND,AEP,JE)
	3-067-951-31	MANUAL,INSTRUCTION	(SPANISH/PORTUGUESE) (CD200:AEP,E,JE/CD300:AEP,E,JE)
	3-067-951-41	MANUAL,INSTRUCTION (ITALIAN/DUTCH)	(CD200:AEP/CD300:AEP)
	3-067-951-51	MANUAL,INSTRUCTION	(TRADITIONAL CHINESE/SIMPLIFIED CHINESE) (CD200:CN,E,JE,HK/CD300:CN,E,JE,HK)
	3-067-951-61	MANUAL,INSTRUCTION (SWEDISH)	(CD200:AEP/CD300:AEP)
	3-067-951-71	MANUAL,INSTRUCTION (ARABIC)	(CD200:E/CD300:E)
	3-067-951-81	MANUAL,INSTRUCTION (KOREAN)	(CD200:JE,KR/CD300:JE,KR)
	3-067-952-01	MANUAL,INSTRUCTION (DIRECT CD)	(JAPANESE) (CD200:J/CD300:J)
	3-067-952-11	MANUAL,INSTRUCTION (DIRECT CD)	(ENGLISH) (CD200:US,CND,AEP,UK,AUS,CN,E,JE,HK/ CD300:US,CND,AEP,UK,AUS,CN,E,JE,HK)
	3-067-952-21	MANUAL,INSTRUCTION (DIRECT CD)	(FRENCH/GERMAN) (CD200:CND,AEP,JE/CD300:CND,AEP,JE)
	3-067-952-31	MANUAL,INSTRUCTION (DIRECT CD)	(SPANISH/PORTUGUESE) (CD200:AEP,E,JE/CD300:AEP,E,JE)
	3-067-952-41	MANUAL,INSTRUCTION (DIRECT CD)	(ITALIAN/DUTCH) (CD200:AEP/CD300:AEP)
	3-067-952-51	MANUAL,INSTRUCTION (DIRECT CD)	(TRADITIONAL CHINESE/SIMPLIFIED CHINESE) (CD200:CN,E,JE,HK/CD300:CN,E,JE,HK)
	3-067-952-61	MANUAL,INSTRUCTION (DIRECT CD)	(SWEDISH) (CD200:AEP/CD300:AEP)
	3-067-952-71	MANUAL,INSTRUCTION (DIRECT CD)(ARABIC)	(CD200:E/CD300:E)
	3-067-952-81	MANUAL,INSTRUCTION (DIRECT CD)(KOREAN)	(CD200:JE,KR/CD300:JE,KR)
	3-069-219-01	SPVD-006 (CD-ROM) (DIRECT CD)	
	3-987-015-01	BELT (S), SHOULDER	
	X-3951-672-1	CAP ASSY, LENS (CD300)	
	X-3951-763-1	CAP ASSY, LENS (CD200)	
		NP-FM50 BATTERY PACK (NOT SUPPLIED)	

Note :	**Note :**
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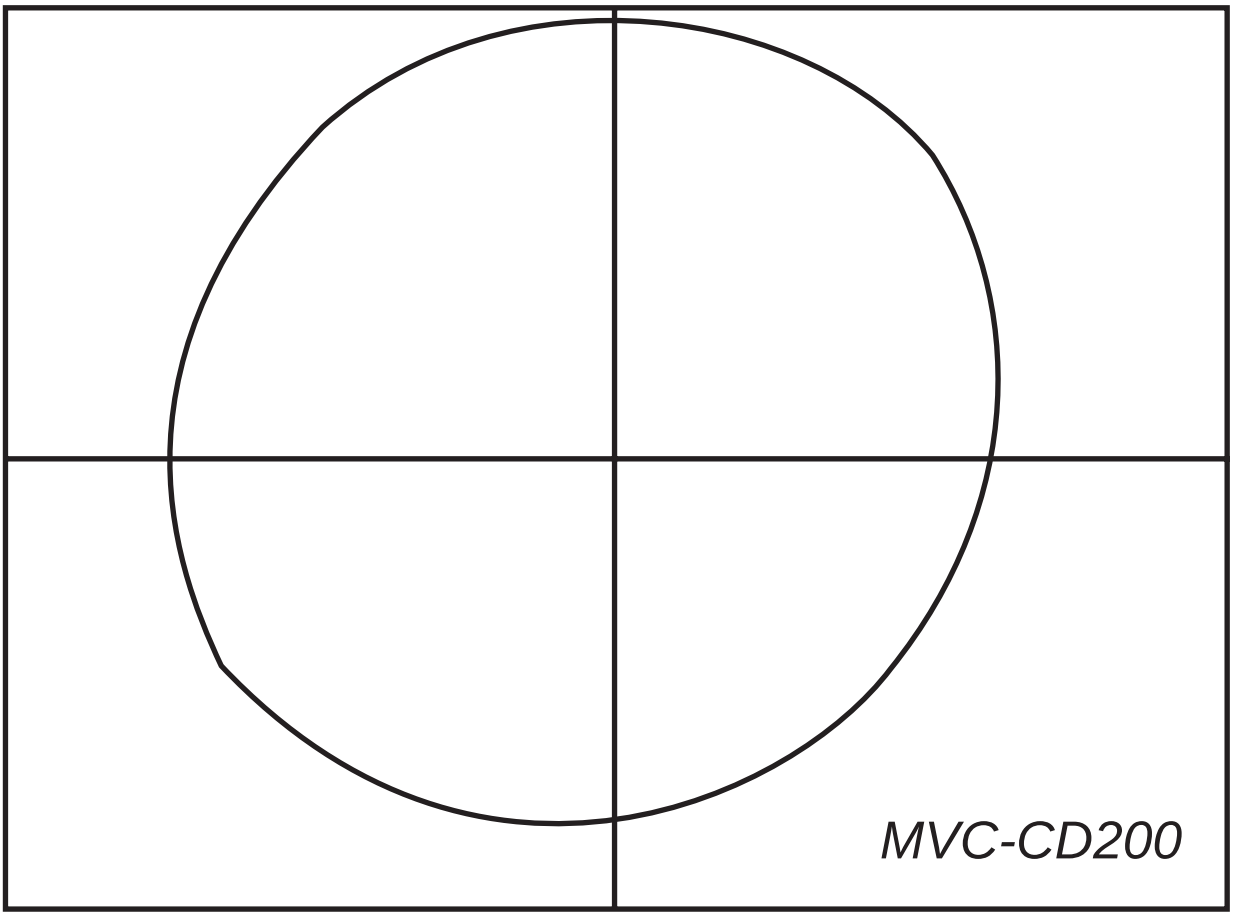
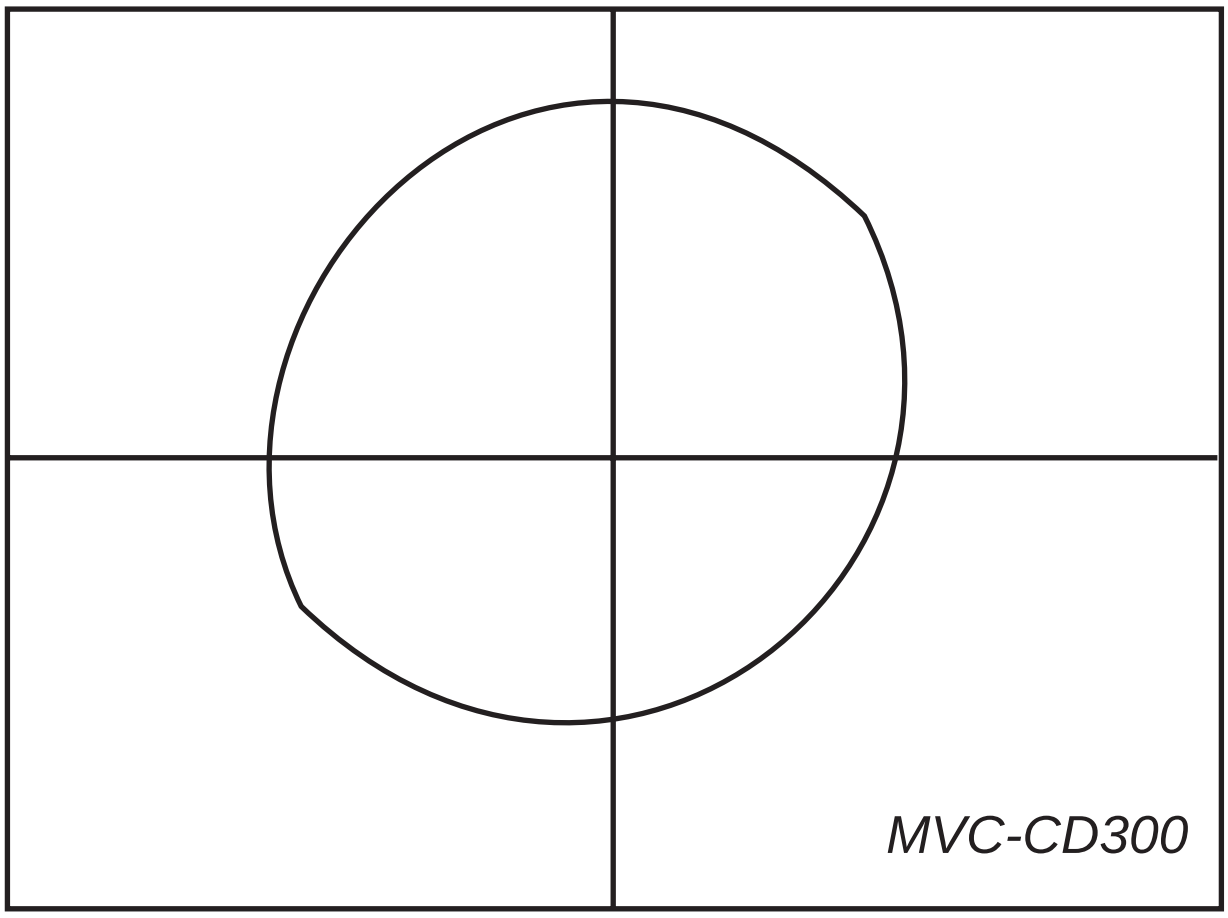
⟨LED ILLUMINATION AXIS FRAME⟩



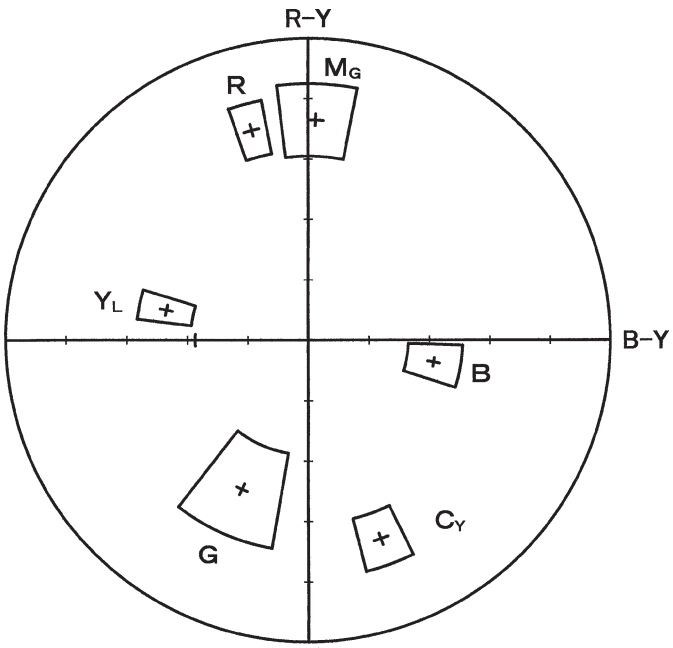


Take a copy of LED ILLUMINATION AXIS FRAME with a clear sheet for use.

〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

For NTSC mode

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.



MVC-CD200/CD300

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